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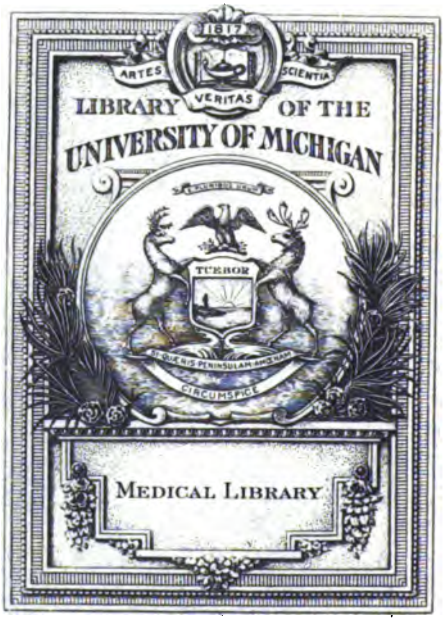

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THE

ECLECTIC REPERTORY,

AND

ANALYTICAL REVIEW,

Medical and Philosophical.

EDITED BY A SOCIETY OF PHYSICIANS.

> ………………………Apis matinæ
> More modoque.—Hor.

> Nullis unius disciplinæ legibus adstricti, quibus in philosophiâ necessariò paremus, quid sit in quaque re maxime probabile semper requiremus.—Cic.

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THE

ECLECTIC REPERTORY

AND

ANALYTICAL REVIEW.

VOL. IV. OCTOBER, 1813. No. I.

SELECTED PAPERS.

Experiments and Observations on the Serum of the Blood.

BY JOHN BOSTOCK, M. D. OF LIVERPOOL.

[From the Medico-Chirurgical Transactions, Vol. II.]

IN a paper which was published in the Transactions of the Medical and Chirurgical Society of London,[*] I maintained the opinion, that blood does not contain any constituent to which the name of Jelly or Gelatine can be properly applied. As this opinion was in opposition to the highest chemical authorities,[†] I could not expect it to be received without opposition, more especially as the experiments which were adduced in its favour, were both few in number, and very simple in their nature. Since that time I have examined the subject with more attention, and have endeavoured to vary the experiments in such a way, as to meet the objections to which the former were liable. It may be necessary to premise, that by the term *Jelly*, I mean that animal substance which possesses the characteristic property of being liquefied by heat, and becoming concrete by cold, and which forms with tan a compound that is insoluble in water.

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[*] Medico-Chirurgical Trans. Vol i. p. 47.

[†] See the references in the paper referred to, p. 69.

By the modern authors who have written upon the blood, it is asserted, that when serum is coagulated by heat, the albuminous part alone is rendered solid, and that there may be separated from the coagulated albumen a fluid, which holds a quantity of jelly in solution. To this fluid, which appears first to have been distinctly recognized by Dr. Butt, Cullen restricted the term of serosity, which had been previously applied by Senac to the serum at large; MM. Fourcroy and Vauquelin first announced the existence of jelly in it, MM. Parmentier and Deyeux farther developed the supposed discovery, and since that time its existence has never been called in question. The serosity may be procured either by permitting it to ooze spontaneously from coagulated serum cut into small pieces, or more readily, by digesting the coagulated serum in boiling water. If the quantity of water employed be not more than the bulk of the serum, the fluid is very nearly the same as obtained by either of these means; for, in consequence of the serosity being lodged in minute cells dispersed through the serum, which are penetrated by the boiling water, it is by this operation more completely separated from the albumen. The solid contents of the serosity generally amount to about $\frac{1}{50}$ of the weight of the fluid, but in different specimens I have found them to vary from $\frac{1}{45}$ to $\frac{1}{70}$. It is slightly opake, its taste is saline, and it has an odour which has always appeared to me specific, and different from that of serum; it is generally neither acid nor alkaline, but occasionally I have thought that I could perceive in it the slightest degree of alkalescency.* When the serosity has the oxymuriate of mercury added to it, or when it is subjected to the heat of boiling water, no effect is produced, and I never could perceive that the slight degree of opacity which it naturally possesses was increased; but when the two operations are united, when the oxymuriate of mercury is added, and the mixture is kept for some time at the boiling temperature, there is a manifest increase of opacity, and a precipitate is formed. An infusion of tan always increases the opacity of the serosity, and a precipitate very gradually subsides from it.* When serosity has been exposed to the atmosphere for some days, it becomes more opake, a flaky substance separates from it, and its odour is extremely nauseous; in this state it exhibits an excess of alkali. I have never been able to detect any degree of acidity during its spontaneous decomposition, although this has been asserted to be the case.† When the serosity is evaporated by a gentle heat, it gradually becomes less clear, small flakes are formed in it, and at length a semitransparent substance is left, of a membranous appearance, which evidently consists, at least for the most part, of animal matter. By exposure to a greater heat it grows brown, emits a peculiar smell, and at length becomes charred. If the serosity, after being evaporated to dryness, be digested in boiling water, it is re-dissolved, except a small quantity of flaky matter, which floats in it, and which seems incapable of solution. When the solid contents of the serosity, after having been evaporated, and reduced to a half charred state, are digested in boiling water, the fluid is rendered brown, and, upon evaporation, a brown mass is left, which contains small cubical crystals of the muriate of soda.‡ If the evaporation of the serosity be stopped during the process, and the substance cooled, it does not exhibit any appearance of gelatinisation. Acetate of lead and nitrate of silver both throw down copious precipitates from the serosity.

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* The alkaline test which I generally employ is turmeric; it possesses the advantage of not being injured by keeping, and it is obviously affected by a solution containing 1-2000th part of its weight of potash.

---

* The preparation of tan which I have found the most convenient for the experiments, is formed by the extract of rhatany. If the rhatany be digested in hot water, and filtered after it becomes cold, a solution is formed of nearly uniform strength, and which remains a considerable time without moulding or undergoing any spontaneous change. In both these respects it is superior either to catechu or to galls.

† I suspect the generation of acid in serosity must be classed among those numerous occurrences, where the experimentalist has been guided more by hypothesis than by observation. When serosity had been announced to be a gelatinous fluid, it followed of course that it *must* evolve an acid during its spontaneous decomposition. See Brugmans, as quoted in Thompson's Fourcroy, Vol. III. p. 272.

‡ It was always supposed that the muriatic acid in serum was combined with soda, until Dr. Pearson lately endeavoured to prove it to be potash. My experiments induce me to adhere to the old opinion, as I never found the cubical crystals mentioned above to produce any precipitate with the nitro-muriate of platina. The addition of oxalic acid to serum shows that it contains a minute quantity of lime, and it is said that the phosphate of soda also exists in it.

From these experiments we may conclude, that serosity consists of water holding in solution nearly $\frac{1}{50}$ of its weight of an animal substance, together with a small quantity of the muriate of soda. Of this animal matter a portion is albumen; the exact quantity cannot be ascertained, because it is not practicable to collect the precipitate which is occasioned by boiling the serosity with the oxymuriate of mercury; but from comparing the effects with what takes place, when a known quantity of albumen ovi is added to water, we may conclude that the serosity cannot contain more than $\frac{1}{1000}$ of its weight of albumen. That the remaining animal matter in serosity is not jelly, may be at once inferred from the consideration, that if water contains only $\frac{1}{100}$ of its weight of jelly, it becomes concrete at the usual temperature of the atmosphere; whereas the serosity is perfectly fluid, although the animal matter in it is not much less than double that quantity. In order to ascertain whether there was any portion of jelly in serosity, the following experiments were tried. To a quantity of serum, $\frac{1}{100}$ of its weight of jelly, liquefied by heat, was added, and upon cooling the mixture, it became quite concrete. To 94 grs. of serosity, 6 grs. of a solution of jelly, containing $\frac{1}{50}$ of a grain of solid jelly, was added, so that the jelly would form $\frac{1}{5000}$ part of the weight of the whole fluid. This was exposed to a gentle heat, and when it was nearly evaporated, upon being cooled, a very obvious degree of gelatinization took place. One fact still remained to be explained, which seemed to be the only one that opposed my conclusion, and this was the effect of tan on the serosity. The precipitate that is produced when tan is added to serosity, has always been supposed to indicate the presence of jelly;* but tan, although it does not detect albumen as minutely as it does jelly, yet it produces an obvious effect in a fluid that contains only

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[*] In the most recent analyses of animal fluids, it has been assumed as a sufficient proof of the presence of jelly, that a precipitate is produced by tan. From this circumstance alone M. Nicolas concludes that the aqueous humour of the eye contains jelly. Ann. Chim. T. LIII. p. 310.

$\frac{1}{1000}$ of its weight of albumen.* To prove that the action of tan on serosity depends upon the small quantity of albumen still remaining in it, a portion of serum was diluted with 4 times its bulk of water, to this was added $\frac{1}{4}$ of its bulk of a saturated solution of the oxymuriate of mercury, and the mixture was kept for some time at the boiling temperature; a hard dense precipitate was formed, the fluid was left transparent, and now it produced no precipitate with the solution of tan. Against this experiment it might be urged, that although the oxymuriate of mercury has no action upon jelly alone, yet that when a small quantity of jelly is united to a large proportion of albumen, the compound may be precipitated by the oxymuriate. To examine how far this objection was valid, I added to a portion of serum about $\frac{1}{100}$ of its weight of jelly, and then boiled it with the oxymuriate of mercury. A precipitate was formed of the usual appearance; but as the fluid cooled, the jelly formed a distinct concretion, and did not appear to have been incorporated with the albumen, or affected by the oxymuriate of mercury. There was another obvious difference between the precipitates formed by tan in serosity and in jelly; the precipitate in the serosity is incoherent, it subsides very slowly, and can scarcely be separated from the fluid by a filtre; whereas the precipitate in a solution of jelly of the same strength is a hard dense substance, which almost immediately separates from the fluid, and may be collected in a distinct mass.

Conceiving it to be sufficiently established, that there is no jelly in serosity, the next object of inquiry was, whether the opinion be correct, that only a small part of the animal matter in it is albumen. For this purpose I examined the effects produced by the same re-agents upon serosity, and upon serum diluted with water, until its solid contents were equal, or even inferior in quantity to those of the serosity. A quantity of serum, which contained twelve per cent. of solid matter, was diluted with eleven times its bulk of water, so that its solid contents would be considerably less than that of the serosity, and the following comparative experiments were then performed. A boiling heat produced in the diluted serum a perceptible opacity, but in the serosity no effect. The same quantity of oxymuriate of mercury was added to both these fluids; it produced an evident precipitate in the diluted serum, but none in the serosity; when the boiling heat was applied to the two portions of fluid containing the oxymuriate of mercury, it produced in the diluted serum a distinct precipitate, which separated from the fluid and subsided; in the serosity there was a degree of opacity produced, but no distinct precipitate was formed. Even when this serum was still farther diluted, with three times its bulk of water, so that its solid contents could not have been 1-6th as much as those of the serosity, the joint effects of heat and the oxymuriate of mercury caused a greater degree of opacity. And there is a still more decided fact in favour of my opinion. If serum be boiled with such a quantity of the oxymuriate of mercury as to remove all the albumen, and to leave a slight excess of the oxymuriate, the least addition of albumen will cause a fresh precipitate; yet if the fluid be evaporated, a residuum is procured, which is evidently, in part, animal matter. I have noticed a difference between albumen and the animal matter in serosity with respect to their solubility in water. Coagulated albumen is perfectly insoluble, as is proved by the constitution of the serum: and if albumen be very slowly evaporated by a heat not sufficient to coagulate it, it is capable of being redissolved; whereas if it be dried by a heat in any considerable degree greater than that necessary for coagulation, it remains insoluble in water. As far as I have been able to ascertain the fact, with respect to the animal matter in serosity, it does not possess the property of being equally insoluble by being exposed to the same degree of heat. When serosity has been evaporated, the whole is not again soluble, but the insoluble portion I attribute to some remains of albumen, which we have been led, from other circumstances, to conclude still exists in it. The greater part however is soluble, and remains so even when the heat applied has been considerable enough to produce a commencement of carbonization. These facts I consider sufficient to warrant the conclusion, that the greatest part of the animal matter in serosity is not albumen. I shall not at present inquire into its properties, or into the denomination which ought to be applied to it, as I propose to enter more fully into this investigation on some future opportunity. I shall conclude this paper with some detached observations respecting the serum.

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* If to a quantity of water 1-120th of its bulk of serum be added, we shall have a mixture which contains about 1-1000th of its weight of solid albumen. Equal parts of this mixture and of the infusion of rhatany being added together, produce an immediate and very perceptible precipitation.

The specific gravity of serum is generally stated at 1.027 or 1.028,* the original authority for which appears to have been Jurin; I have examined several specimens, and have always found it to be less; the average of my experiments is about 1.023. The proportion of the solid contents of the serum to the watery part, varies less than might have been supposed, from the varieties that we observe in the state of the blood. I have generally found the solid contents left by a slow evaporation to be pretty exactly 12 per cent.

Serum always exhibits marks of an uncombined alkali, the amount of which I have endeavoured to ascertain. After observing the effect that was produced by serum upon turmeric paper, I added a solution of potash, drop by drop, to a quantity of water, until it seemed to tinge the paper in an equal degree; when it was found that about $\frac{1}{1000}$ of the weight of the solution had been added to the water. The strength of the alkaline solution was such, that it was saturated by half its weight of sulphuric acid of the specific gravity of 1.76. To 240 grains of serum acetic acid was added, until there was a very slight excess of acidity; then to an equal bulk of water the same proportion of the alkaline solution was added, as was indicated by the last experiment, when it was found, that as much acetic acid was necessary to saturate this water as the 240 grains of serum. From these two experiments it appeared, that one ounce of the serum required for its saturation, as nearly as possible, one grain of the sulphuric acid. Acetic acid, 100 parts of which require for saturation 43 parts of pure potash, will cause an evident excess of acidity in 60 times its bulk of serum.

It is generally supposed that the alkali in serum is in the caustic state, and the following experiments seem to favour this opinion; although it must be acknowledged, that the smallness of the quantity renders it difficult to speak with absolute certainty upon the subject. To a quantity of serum, acetic acid was added, until there was a slight excess of acidity, but no effervescence could be observed. To another portion of serum, about $\frac{1}{100}$ of its weight of a solution of a carbonated alkali was added, and this was then supersaturated with acetic acid, when a number of very minute bubbles might be discerned rising through the fluid. A solution of jelly was formed of about the same degree of viscidity with serum, and to this a solution of the carbonate of potash was added, so as to make it equally alkaline; when this was neutralized by acetic acid an obvious effervescence was excited. As far as I could come to any certain conclusion respecting a point of so much minuteness, it did not appear that the alkali of serum became carbonated by being exposed to the atmosphere for a considerable length of time. Notwithstanding the alkalescency of the serum, the serosity scarcely ever exhibits any decisive marks of an uncombined alkali.*

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* See the Systems of Thomson and Murray, Henry's Epitome, and Aikin's and Parr's Dictionary.

In the experiments upon the serosity, I have assumed, that its solid contents principally consist of animal matter; there are, however, some saline substances in it, and it was important to ascertain the proportion which they bore to the whole. For this purpose a quantity of coagulated serum was cut into small pieces, and boiled with successive portions of water, until all the soluble matter seemed to be separated from it; these different portions of water were then evaporated, and the residuum was dried by a heat sufficient to reduce it to a half charred state. It was then digested in hot water, the fluid filtered, and again evaporated. The water was tinged brown, and as the evaporation proceeded, evidently shewed that it contained a considerable proportion of animal matter At length small cubical crystals were formed, which, when purified by a subsequent solution and crystallization, were found to be nearly in the proportion of 1½ grain in one ounce of the entire serum.

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* I speak of the serosity in its entire state, as procured in the manner mentioned in the beginning of this paper. When a considerable part of it has been evaporated, the residue I have found to be alkaline. We must therefore suppose, that there exists in serosity a very minute quantity of alkali, but commonly too little to be detected by turmeric; it must be less than 1-2000th of its weight, considerably less than that in the serum from which the serosity is procured.

The most remarkable and characteristic property of albumen is its coagulation by heat, and by different chemical substances, particularly by alcohol and by acids. No explanation of this phenomenon has been offered, which appears to me satisfactory, nor indeed does it seem easy to refer the operation of such different agents to any one principle. The hypothesis, which is by far the most ingenious, and which, from the authority of its supporters, claims every attention, was originally proposed by Dr. Thomson,* and afterwards more fully developed by Mr. Brande.† Mr. Brande adopted it in consequence of his discovery, that the negative extremity of the Galvanic apparatus has the power of coagulating albumen; an effect which he explains upon the principle, that the action consists simply in the abstraction of an alkali, which was before in combination with the albumen, and which preserved it in the liquid state. Uncoagulated albumen he therefore considers as essentially an alkaline solution, and that heat acts by causing some new disposition of the affinities, in consequence of which the alkali is transferred from the albumen to the water. Alcohol and the acids, he supposes, in like manner, produce their effect by combining with the alkali. But to this hypothesis there are, I conceive, insuperable objections. In the first place, although it is admitted that alkalies possess the property of dissolving albumen, yet for this purpose a quantity is necessary, very much greater than what we have reason to suppose exists in serum. If the affinities are so nicely balanced in the serum, that the mere application of heat can separate the alkali from the albumen, much more would it permit itself to be displaced by an acid; so that when a quantity of acid has been added, sufficient to produce an excess of acidity in the serum, we must conclude, that all the alkali has been neutralized. The above experiments show how very minute this quantity of alkali is, and how totally inadequate to produce the effects assigned to it. That the mere removal of the alkali from the albumen does not cause its coagulation, I think may be concluded, from the fact, that acetic acid may be added to the albumen, in more than 100 times the quantity necessary for saturation, without any appearance of coagulation taking place.

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* Chemistry, v. 489.

† Phil. Trans. 1809. p. 373.

This seems to prove that coagulation does not depend merely upon the abstraction of the alkali; and, I confess, appears to me quite decisive against the hypothesis of Mr. Brande. At the same time I acknowledge myself unable to substitute any other in its place, and therefore I content myself at present with expressing the fact, that the action of heat upon albumen is specific, unlike any other phenomenon, with which we are acquainted, and not capable of being referred to any general principle.

The operation of alcohol upon albumen I conceive to depend, in a great measure at least, upon its power of abstracting water from it. This opinion I ground upon the following circumstances. When albumen is only moderately diluted, the effect of this re-agent is greatly diminished, or even altogether destroyed. If we dilute serum with six times its bulk of water, the effect of alcohol is scarcely perceptible, while oxymuriate of mercury converts the fluid into a thick cream. If alcohol be poured into serum, its superior levity keeps it on the surface, and it immediately produces a coagulation in the upper stratum of the albumen; but if a quantity of water be added, the coagulum is instantly removed; and the same may be effected by exposing it to a gentle heat, when the alcohol is evaporated, and the serum is left in the same state as before the experiment. This circumstance proves that albumen, as coagulated by heat, is a very different substance from the coagulum that is formed by alcohol, and from this difference in the result we may infer, that the processes themselves are different in their nature.

The coagulation of albumen by sulphuric acid must, I conceive, likewise be referred, in some measure, to its affinity for water; because in this case, as in that of alcohol, if the serum be considerably diluted, it quickly loses the property of being coagulated by the acid, and a coagulum which has been formed may be re-dissolved, by the addition of a considerable quantity of water. If the serum be diluted with six times its bulk of water, no immediate effect takes place from the addition of sulphuric acid; and after serum has been coagulated by sulphuric acid, if a quantity of water be immediately added, and the mixture agitated, the coagulum is entirely re-dissolved, and the fluid is rendered transparent; but although the first effect of the acid be owing to the sudden abstraction of the watery part of the serum, yet it seems that afterwards an union takes place between the acid and the albumen, for even in serum that is considerably diluted, a coagulum is gradually produced, which is insoluble.

The oxymuriate of mercury has been classed among the substances which coagulate albumen, yet strictly speaking, I should regard it rather as a precipitant than as a coagulator. It enters into a chemical union with albumen, and forms an insoluble substance which subsides from the fluid; it even acts so powerfully, as that when it is added to albumen, and heat is afterwards applied, it destroys the coagulum which would otherwise be formed, and entirely separates the water from the solid part of the serum. The following experiment is, I think, a decided proof that the oxymuriate of mercury forms a real chemical union with albumen. The oxymuriate was added to serum in such proportion as to separate all the albumen, and to leave the fluid transparent; an equal bulk of water had the same quantity of oxymuriate added, and to equal measures of this solution, and of the fluid from the former experiment, the muriate of tin was added; in the fluid a turbidness was produced, and a small grey precipitate slowly subsided; in the solution a copious black precipitate was formed, which fell to the bottom in considerable quantity. An experiment of a similar kind was made with pure potash, by adding it in equal quantities to the solution of the oxymuriate of mercury, and to the fluid that was separated from a mixture of oxymuriate and serum. Although there was some variety as to the effects produced on different specimens of serum by the oxymuriate of mercury, yet generally it appeared, that if to a quantity of serum half its weight of a saturated solution of the oxymuriate of mercury was added, and the mixture boiled, the albumen was all separated, the fluid was left transparent, and was affected neither by the oxymuriate nor by the serum, shewing that they had mutually saturated each other. The same circumstance, however, seemed to take place here, which had formerly been observed with respect to the compound of tan and jelly, that although there is one particular proportion in which the substances seem most disposed to unite, yet according to the quantities of each that are added together, a considerable variation is produced in the nature of the product. In a comparative experiment, which was made for the purpose of ascertaining this point, it was found, that when the same quantity of the oxymuriate of mercury was added to two portions of diluted serum, one containing only half as much albumen as the other, the weights of the precipitates were as 9 to 15. When dried by a moderate heat, the precipitate which contained the greater proportion of the oxymuriate was harder, and of a blacker colour than the other.*

The following conclusions may be deduced from the experiments that are detailed in this paper. 1. The serosity of the blood contains no jelly. 2. It contains a minute quantity of albumen. 3. It contains about 2 per cent. of solid contents; the chief part of which is an animal matter different both from jelly and albumen. 4. It contains a little muriate of soda, and probably also a minute quantity of uncombined alkali. 5. The animal matter peculiar to serosity is not affected either by the oxymuriate of mercury or by tan, and it is not, like albumen, rendered insoluble by heat. 6. The specific gravity of serum is generally not more than 1.023. 7. Its solid contents are generally about 12 per cent. 8. The quantity of uncombined alkali in one ounce of serum is saturated by one grain of sulphuric acid. 9. The alkali is in the caustic state. 10. Serum contains about $\frac{1}{150}$ of its weight of the muriate of soda. 11. It is probable the coagulation of albumen by heat does not depend upon any chemical change in the relation of the alkali to the albumen. 12. It is probable that alcohol coagulates albumen principally by the sudden abstraction of water from it. 13. Sulphuric acid acts partly on the same principle, but partly also from a chemical union between the acid and the albumen. 14. The oxymuriate of mercury acts by forming a chemical compound with the albumen which is insoluble in water. 15. The compound of the oxymuriate of mercury and albumen is not uniform in the proportion of its constituents.

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* The effect of the oxymuriate of mercury in coagulating serum appears to have been first discovered by Boyle. In the "Natural History of the Blood" he relates the following experiment: "To try also what a salt compounded "with a metal would do upon our serum, we put to it a little strong solution "of sublimate, with which it presently afforded a white and curdy substance."

Cases of Hydrophobia, treated, one of them successfully, by Mr. F. Tymon, Assistant Surgeon, H. M. 22d Light Dragoons; *with Observations by* Dr. A. Berry of the Madras Establishment, *Proceedings of the Medical Board, and Resolutions of the Honorable Governor in Council, in reference thereto.**

[From the Edinburgh Medical and Surgical Journal, for January 1813.]

To the Editor of the Madras Gazette,

Sir,

Considering it to be the duty of every medical man to make as publicly known as possible, every fact conducive to the welfare of suffering humanity, I give you two cases of hydrophobia, from the Medical Journal of H. M. 22d Dragoons at Arcot, for last month, as a novel and interesting article of communication for your next paper—one case unsuccessful, to show the nature of the disease, and the other successfully treated; a well-marked case, and perhaps the first on record where a patient, under such symptoms, has been saved; for in no disease have all endeavours at cure hitherto so uniformly failed as in this, when hydrophobic symptoms, induced by the bite of a rabid animal, have once been fully formed.

The alarm and dread that hydrophobia at all times causes,—the great distress that has been so frequently depicted from its effects,—and the liability to it, which all are exposed to from the bite of any rabid animal,—will, I think, attach considerable interest to the treatment adopted in the successful case, as it holds out a rational prospect of cure in this, one of the most melancholy forms of disease.

I shall reserve what I have further to observe, for the conclusion of this paper, and give you the cases as they appear in the Journal of Mr. F. Tymon, the assistant-surgeon of the regiment.—And first,

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* For these valuable papers we are indebted to Mr. James Kellie, Assistant-Surgeon at Bangalore, and to Dr. Shoolbred, Surgeon to the Presidency at Calcutta.

The Unsuccessful Case.

John Irwin, private dragoon, admitted on the 6th October. In the morning when I first saw him, he was convulsed all over his body, the muscles of his neck unusually agitated, pulse at times quick, and afterwards ceasing altogether for a short lapse. Ordered him into the hospital. On being brought there, found no alteration in his symptoms. Directed an antispasmodic draught, which I offered in person. This he first viewed in silence, but, when pressed to take it, and discovering it to be a liquid, his convulsions increased with redoubled violence; sweats broke out profusely, attended with difficult respiration. He said the light caused him great uneasiness, consequently the light was excluded. He was observed to froth at the mouth, and his insuperable aversion to any thing in the form of a fluid, awoke in my mind the belief that all these direful symptoms must be connected with, or in fact be the result of canine madness. Unhappily, on inquiry, this supposition was not groundless, for the patient acknowledged his being bit on the 15th of July last by a dog in the barracks. His raving rather increased, but his wife (*an European*) corroborated the fact. I did my utmost to induce him to swallow the draught alluded to, but without success. He was sensible to reasoning at times, and abused dogs, lamenting his situation; but nothing liquid would prove acceptable. Whenever liquids were offered, he took them into his hands, attempted putting the fluids to his mouth, and immediately dashed them on the ground, and then his spasms commenced. He allowed me to bleed him. I took about 15 oz. of blood, and bound up his arm. This produced no alteration in his aversion to fluids. Ordered an injection of 300 drops of laudanum, and to rub in a drachm [of mercurial ointment?] twice every hour. He expired five hours after being admitted.

On opening the body the appearances were remarkable. The stomach was inflamed, several blood-vessels were extravasated, and the stomach loaded with bile. The intestines appeared to have undergone no change; the liver was slightly altered from its natural colour; the gall-bladder enlarged considerably and full of bile, very hot to the touch. The lungs were not changed in any manner, nor could I discover any thing preternatural in the thorax. His eyes were swelled, and the blood-vessels on the tunica conjunctiva enlarged in their diameters beyond conception. On opening the head, nothing appeared which could induce a belief that any part of the brain or its vessels had suffered. The tongue was swelled, and so were the fauces, and inflamed.

The Successful Case.

Benjamin Mason, a farrier, aged 34, was seized with violent spasms on the 7th October. When I saw him, I found him violently agitated and screaming loudly; eight of the strongest men of his regiment were required to keep him on his cot; he clenched his fists at times, and made efforts to seize every thing he saw. In the midst of the paroxysm he said that carriages, horses, animals of every description were floating before him in the air. He was covered all over with sweat, his eyes at times staring, and at other times melancholy; gnashed his teeth in a manner not to be described; his neck was swelled; pulse very fast; light odious; pain in his head and temples increasing. He called for drink; but the instant he heard them pouring water into a tumbler his wildness increased. He then beckoned for it. When it came nigh him he shook his hand and trembled, I may say shivered. I made inquiries if he had been bitten by a dog at any period: his comrades acknowledged he was. One hour after I saw him, his ravings and efforts to disengage himself from his keepers became so tiresome, as to render it necessary to tie him to his cot; accordingly he was secured by several coils of bed-tape. I discovered he was bitten on his left thumb; therefore no obscurity now remained as to the nature of his complaint. I began by bleeding him until *scarcely a pulsation was to be felt in either arm.* During the operation, he made several efforts to bite me. As his arms and body were completely secured, and the quantity of blood taken away naturally reduced his efforts, I now offered a draught, which consisted of 100 drops of laudanum in mint-water. He endeavoured to reject it; but I separated his jaws by means of a small piece of wood, introduced between them, and poured the draught into his mouth, which he swallowed, by keeping his head in a recumbent posture. Notwithstanding some efforts were made in deglutition to reject it, his condition was so much debilitated from loss of blood as to enable me to effect it.

In the mean time I ordered injections of 300 drops of laudanum every second hour, and a drachm of mercurial ointment to be rubbed in every third hour.

P. M. 4 o'clock.—Is now in a slumber. At half-past 5 he awoke, with slight efforts to separate himself from his bindings. Pain in his head excruciating. Shaved his head, and blistered it all over. Mercurial frictions to be continued. Still has an aversion to fluids. Used the same means as before. Draught and glysters to be repeated.

P. M. 9 o'clock.—Slept for two hours, and appears to be refreshed; complains of a lassitude and sickness at stomach; speaks rationally. Offered him conjee water, which he kept in his mouth for a short time, swallowed a little, and discharged the remainder. Pulse rising. Repeat the frictions. To take a pill of four grains of calomel and two grains of James's powder, three times during the night. To repeat the injection twice during the night.

8th.—Pain in his head subsided; extremely debilitated, but rational; calls for drink, which, with some hesitation, he puts to his mouth and swallows, with a slight noise in his throat; pulse low. Mercurial frictions as before described to be continued. A pill of calomel four grains, and of opium and James's powder two grains, every second hour. Opiate injections to be repeated.

P. M.—Pain in his forehead become excruciating; was tranquil otherwise during the day; pulse 79. A blister to be applied to his forehead. To repeat the pills three times in the night, and to rub in a drachm of mercurial ointment every second hour.

9th.—Very easy; relieved from pain and uneasiness in his head; had only one evacuation for the last 24 hours. Castor oil, one ounce, to be taken immediately. Friction to be continued.

P. M.—Gums getting tender; feels no horror at the sight or approach of liquids; pulse rather hurried. To rub in a drachm of the ointment thrice during the night; pills to be continued. Bathed his feet in warm water.

10th.—Fugitive dislike to fluids; when pressed, swallows conjee water, and took one glass of wine; pulse rising and regular; gums tender. Continue friction; repeat pills.

P. M.—Bathed his feet as before.

11th.—No mercurials in any shape; complains of weakness. His countenance is fallen, but appearances of doing well are manifest; spits a great deal. Continue pills and frictions.

P. M.—No alteration. Repeat pill twice during the night.

12th.—Very easy; gums salivated.

13th.—Very easy. 14th, do. 15th, do. 16th, do. 17th, do. 18th, do. 19th, do. 20th,—Discharged him from the hospital in a perfect state of convalescence, and he has since resumed his duties. (Nov. 1.)

(Signed) F. Tymon,
Assistant Surgeon, 22d Dragoons.

To A. Berry, Esq. M. D.

OBSERVATIONS.

That this was a real cure of hydrophobia cannot be doubted. To satisfy me the more fully on this subject, a statement has been forwarded from Captain Broome, commanding the detachment, depicting the situation of farrier Mason as stated by Mr. Tymon. Captain Broome says that Mason, after the bleeding, became somewhat composed, and held out his hand, saying, "I was bit here, sir;" and Captain Broome states, "I plainly saw a *dark spot*, as if a wound, on the inside of his finger."

A certificate from Henry Jackson, serjeant, specifies, that he and Irwin were bit on the same day, in the beginning of August, and Mason a day or two after.

As to the medical treatment, it must be immediately remarked by the medical reader of these two cases, that the bleeding in John Irwin's case, carried only to the extent of 15 oz. did not arrest, in any degree, the rapid progress of the disease; and that the bleeding of Benjamin Mason, continued *until scarcely a pulsation in either arm was to be felt*, saved his life, by diminishing violent action, and admitting the effect of medicines, that in all former experience had uniformly failed.

It also appears from these two cases, and several unsuccessful ones I have seen, that the hydrophobia from the bite of a rabid animal is of short duration; all those that I have seen having died within 24 or 36 hours at farthest, from the appearance of the disease; and Benjamin Mason was evidently nearly cured, the evening of the day he was attacked, for, at 9 o'clock at night of the 7th October, he could keep conjee water in his mouth, and swallowed a little.

It would also appear that this disease may sometimes put on so mild a form as not to be dangerous, as appears by two other cases from Mr. Tymon,—one of corporal Rice, who was bit severely in the hand by a dog, about the middle of May; and another of serjeant Jackson, who was bit on the same day that John Irwin was, about the beginning of August, instead of the 15th of July, as stated in Irwin's case.

Corporal Rice was admitted into the hospital on the 6th of October, in the evening, for symptoms indicating hydrophobia,—appearing agitated and dejected; complaining of excruciating pain of his head; refusing to drink water when offered to him, pushing it from him at the same time in a gentle manner, accompanied with a deep sigh. He walked about the room, and his ideas were somewhat deranged. Refused to drink water for the whole of the 6th, or even to suck limes, though thirsty. His head was blistered, and mercury used both internally and externally, by frictions with injections. The hydrophobic symptoms in this case ceased in the evening of the succeeding day.

Serjeant Jackson, bit by the same dog that bit Benjamin Mason, was admitted into hospital on the evening of the 7th October. He was one of the number that secured Mason to his cot; he then ridiculed the idea of any danger to himself. When admitted, he complained of tormenting pain in his head; impatience of light; started and was agitated by any sudden gust of wind blowing on him; had a great flow of saliva; was much distressed and agitated at even the sight of water poured out. Pulse regular; partial sweats; drowsy and melancholy; eyes almost fixed, and very much inflamed. By blisters to his head, and mercury internally, and by friction and purgative injections, in the evening of the succeeding day he called for food, and drank conjee water without difficulty.

These few detailed facts, tending to confirm the short period of the disease, I consider of value, as giving confidence to the practitioner, and hope to the patient, by showing, when the progress of the disease can be arrested, a cure may be effected.

The state of John Irwin's stomach, if solely caused by hydrophobia, would indicate the inflammatory nature of the disease, and its principal seat of action, from the fauces to the stomach; rendering it probable that all irritating medicines are improper, and likely to prove hurtful, until that inflammatory action is diminished. I mention this particularly, from verdigrise in considerable quantity, having been stated, in an American paper, to have cured this disease; but I have seen no cases to satisfy me of the utility of this medicine, or that it was ever given with effect in any severe case of hydrophobia.

I will make a few extracts from authors to show how remarkable the successful treatment of hydrophobia must be considered. The celebrated Dr. Fothergill publishes a case of hydrophobia from the bite of a cat, in 1774, which terminated fatally in about 48 hours; and, in his notes on the case, when speaking of a cure for the canine madness, he says, the reader "will find perhaps nothing more of certainty in this respect, than that *all the remedies* hitherto proposed, either as preventives or cures, are found, by experience, to be altogether ineffectual."

The patient was blooded, but only six ounces of blood at first are stated to have been abstracted. He was a second time bled, as Dr. Fothergill states, standing, according as his strength would bear,—and in the evening, the patient received his physicians with the utmost transport of joy; describing, in strong terms, the pleasure and benefit he received from the warm bath, and the hopes he now conceived of a speedy recovery. The bleeding would, in this case, appear to have been too long delayed, for he died exhausted in about seven or eight hours after, having been for about half an hour in the warm bath after it; from which, when immersed, he always found great relief.

Dr. Mosely, in his publication more than 20 years later, recommends the cutting out of the part bit as the only remedy. He says, "This method of treating the bites of mad animals, if on a part where it can be used, will, I am confident, prevent their fatal effects; applied *at any time previous* to the first symptoms that forerun a general affection which ends in hydrophobia, and admits of *no remedy*."

Mr. Darwin, in his Zoonomia, speaks of hydrophobia as a fatal disease, and considers it to resemble tetanus or locked-jaw, in its tendency to convulsion from a distant wound. This similarity between the two diseases may suggest, under certain circumstances, to medical practitioners, the utility of bleeding carried to the length of diminishing spasmodic action in those dangerous, and too frequently fatal diseases, tetanus and locked-jaw, and if it is stopped when fainting occurs, no bad consequences follow, as is shown by Dr. Fothergill, and more particularly by Dr. Veitch on ophthalmia; nay, that it is less detrimental than repeated bleedings even to a less extent.

Dr. Cullen speaks only generally and doubtfully of any preventive or remedy for hydrophobia.

I have now, I believe, stated sufficient to show, that the successful treatment of a well-marked case of hydrophobia is an event of great import to the public and to the medical profession; and that further facts, properly detailed, either to confirm or to show the inefficacy of the practice here recommended, or to point out any other successful method, should be made known by medical practitioners, to rescue this disease from being an opprobrium to the healing art; and attention should be had, on any recurrence of such an accident, to a person who has been cured of a well-marked disease—to ascertain whether the poison of a rabid animal has obeyed the laws of the inoculated animal poisons, that infect the system, after a time, by absorption, produce a general affection and febrile disease, and thus render any subsequent inoculation or infection innoxious, which I think may be probable. If this can be ascertained, much will be gained in the knowledge of this disease; and I have, in consequence, requested to be made acquainted with whatever may befal Benjamin Mason, whose recovery has suggested this idea.—I am, sir, your obedient servant,

Fort St. George, *Nov.* 20, 1811. A. Berry.

Medical Board, *7th February*, 1812.

1. The Medical Board have the honour to acknowledge the return of their proceedings, of the 29th November last, with the resolutions of the Honourable the Governor in Council thereon, dated the 7th ultimo, expressing the happiness which his Honour in Council will have, in giving all possible publicity to the authenticated case of recovery from hydrophobia, and directing the Board to transmit to him two copies of the extract from Mr. Tymon's Journal, for the information of the Govern-

ments of Bengal and Bombay, with such observations on the case as the Board may judge necessary.

2. The Medical Board have now the honour to transmit two official copies of the case of Benjamin Mason, a farrier in his Majesty's 22d Dragoons, extracted from the journal of Mr. Tymon, the assistant surgeon of the regiment, which came to the Board authenticated in the fullest manner, both by Mr. Tymon and also by a certificate from Captain Broome, commanding the detachment.

3. The violence of the disease, and the decidedly successful practice that was adopted, make this case of hydrophobia of considerable interest, holding out, as it does, a rational prospect of cure in one of the most melancholy forms of disease, and accordingly deserving of being most carefully and extensively published.

4. Another case, which terminated fatally, showed that the cure of Benjamin Mason was in a great measure, if not solely, to be attributed to bleeding having been carried to the extent described by Mr. Tymon, thereby arresting the progress of the disease, and gaining time for the administration of the proper medicines. It is to this circumstance that the Medical Board think attention should be chiefly directed, and that, under all similar circumstances, this powerful remedy should be principally depended upon, and early adopted, as the disease, when fully formed, is rapid in its progress, and may possibly be soon too far advanced for even bleeding *to fainting* being of utility; for it is only from a copious loss of blood that the hope of recovery can be entertained, and as medical practitioners can always judge of the extent to which that can be carried with safety, the Medical Board consider it only necessary to draw their attention to it, when sanctioned by so marked an instance of success, as that stated in the case of Benjamin Mason.

5. Another case of the successful treatment of hydrophobia has been brought to the notice of the Board, in an extract from the Philosophical Magazine for August 1805.* This is mention-

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* See an account of a case of Hydrophobia, successfully treated by copious Bleeding and mercury. In two Letters from Dr. Robert Barton of Bent creek, Virginia, to Dr. Benjamin Rush, of Philadelphia. New-York Medical Repository for 1805, page 15. *Editors.*

ed as an additional illustration of the utility of bleeding, and further that, when it is not carried to sufficient extent at the beginning, a greater abstraction of blood becomes necessary than would otherwise have been required. This cure is stated to have been performed by a Dr. Burton, and communicated to Dr. Rush, both of Philadelphia, and must also be deemed authentic. For these satisfactory reasons, the Medical Board have been induced to notice it.

(Signed) T. Gahagan, *Physician-General and President Medical Board.*—A. Watson, M. D. 2*d Member Medical Board.* —Andrew Berry, 3*d Member Medical Board.*

Resolutions of the Honourable the Governor in Council dated 21*st February*, 1812.

Resolved, That 250 printed copies of these proceedings, and of the certified case of recovery from hydrophobia to which they relate, be prepared at the Government Press, under the superintendence of the Medical Board, for the purpose of general circulation, being first attested by the signature of their Secretary.

By order of the Honourable the Governor in Council,
G. Strachey, *Secretary to Government.*

Observations on the Case of Ann Moore, called the Fasting-Woman of Tutbury.

BY A. HENDERSON, M. D.
Physician to the Westminister General Dispensary.

[From the Edinburgh Medical and Surgical Journal, for January 1813.]

Some account of Ann Moore, known by the appellation of the *Fasting-Woman* of Tutbury, having already appeared in your Journal, accompanied by certain speculations on her case, I am induced to transmit to you the particulars of a visit, which I had the curiosity to pay her, with my friend Mr. Lawrence, and another gentleman, when passing through Staffordshire, last summer; and to add a few remarks on her proceedings, with a view to undeceive the public in regard to her, and to expose the true character of her pretensions.

Previously to our visit, we had endeavoured to collect the opinions of the neighbourhood, concerning this case of alleged extraordinary abstinence. Of the medical gentlemen to whom we addressed ourselves, the majority seemed sceptical on the subject; though it did not appear that any very decisive means had been used by them to prove the fact of imposture: but, among the common people, there was the most implicit belief in the truth of the story; and, whenever we ventured to express any doubts, we were invariably referred to the watching, to which Ann Moore had been subjected, as a full and satisfactory refutation of our incredulity.

On our arrival at Tutbury, we lost no time in proceeding to the dwelling of Ann Moore, whom we found sitting up in a bed so constructed as scarcely to admit of her using the recumbent posture. She did not seem in the least discomposed by our abrupt entrance; though, on reaching the house, some bustle was heard in the upper story, as if preparations had been making for our reception. From the appearance of her countenance, which was natural, and even healthy, and from that of her upper limbs, abdomen, and back, which we examined very carefully, she might be called rather thin; but many persons of her age, in perfect health, are much thinner. The abdomen was *not* contracted, nor did it present any peculiar appearance; nor was the pulsation of the aorta more distinctly perceptible that it is in the generality of persons. The lower extremities, however, seemed, to a certain extent, wasted and paralytic; the pulse was 94, firm and regular; both the hands and feet were moist; her mouth, as far as we were permitted to examine it, shewed no deficiency of saliva; and, on holding a mirror before her face, it was immediately covered with copious moisture. She spoke to us in a distinct and tolerably strong voice, and moved her arms and fingers with considerable force. There was an offensive urinous smell about the bed.

In answer to the questions we put to her, she told us that, on the 31st of October, she would be just 51 years old; that she had tasted no solid food for upwards of five years, and no drink for nearly four years, and had no desire for either; that she never even wetted her lips, except when she washed her face, which happened about once a week; that she had voided no urine since the week before Easter three years, and no fæces since that day (August 8) five years; that she had not slept or lain down in bed for more than three years; that she sometimes dozed, with her head reclining on the pillow, but never so as to forget herself; that she had frequently blisters applied to the back of her neck, on account of a giddiness in her head, and that they rose and discharged plentifully; but that in general, she did not experience much uneasiness, nor feel pain, except on pressure of the left hypochondrium; that when she took snuff, which she did habitually, it produced a flow of mucus from the nostrils; that her hands were generally moist; and that she perspired freely over the whole surface of the body, when she had fits. The nature of these fits she did not explain. Her mouth, according to her own declaration, she was unable to open, because it occasioned severe pain behind the jaws; but the lower jaw acted freely enough within the sphere in which she chose to move it in our presence, to show that there was nothing defective in the articulations; the masseter and temporal muscles were soft, and could not, therefore, resist its descent: besides, it was evident, when she spoke, that she could separate her teeth to some extent, and that without giving any indications of uneasiness. Of all the fingers of the left hand, except the index, she said that she had lost the use; the middle finger, indeed, she admitted, could be moved by external force, not by volition. But while Mr. Lawrence was examining the spot, where she complained of pain on opening her mouth, she was observed to use the finger in question without any difficulty. On attempting to raise the two remaining fingers, which were in a bent posture, she made some resistance, and complained of my hurting her. The left hand, she affirmed, was hotter than the other.

Among the circumstances that tend to invalidate many of the above assertions, and, in particular, the statement respecting her prolonged abstinence, the following may be mentioned:

1. *The natural and healthy appearance of her face.*

2. *The strength of her pulse, muscles, and voice.*

3. *The moisture of her mouth, nostrils, eyes, and whole surface of the skin.*—If the functions of the stomach were entirely suspended, or even materially deranged, it is not likely that the saliva would continue to be regularly supplied, since the flow of it depends so much on the healthy state of that organ; and, without taking into account the occasional discharges from

blisters and other causes, it is obvious, that the exhalation from the lungs and surface of the body, which we ascertained, beyond the possibility of doubt, must occasion a correspondent drain from the internal parts. But these excretions have been found to amount, in a healthy person, to more than 65 ounces in the day. Allowing them to be reduced, by disease, to one half that quantity, it is evident that they would still be sufficient to consume the whole substance of Ann Moore in a very few weeks.

4. *The entireness of her intellectual faculties.*—Long continued fasting has always been reckoned among the predisposing causes of insanity. In a case recorded by Tulpius, delirium supervened on the 12th day. The same occurrence took place in that related by Dr. Currie, though a considerable portion of nourishment had been conveyed into the system by means of injections. And, in the "Remarkable Case" described by Dr. Willan, in the second volume of the Medical Communications, much confusion of mind was observable in the latter periods of the disorder.

5. *Her "notorious immoral character," in the former part of her life, and her own confession, "that she once,* THROUGH IMPOSITION, *passed for a religious person, merely for the sake of worldly gain."*[*]—These are strong objections to the reception of her testimony, whatever degree of "calmness and serenity" may mark "her present state of mind;" however "clear and unimpeachable her doctrinal knowledge" may now prove, and however "pleasing it must be to every lover of religion to converse with her." If she once played the hypocrite "for the sake of worldly interest," the presumption is, that she would not scruple to act that, or any other part again, from the same motive.

6. *The obvious interest which she and her attendants have in supporting the deception.*—From the published accounts of her case it appears, that before she began to attract the attention of the public, she had been "labouring under the greatest distresses," and had not even sufficient clothes to cover her bed:[†] But, when we saw her, she seemed to be in very comfortable

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[*] Account of the Extraordinary Abstinence of Ann Moore. By J— L—. 8vo. Utoxeter, 1809, page 8.

[†] Account, &c. p. 16.

circumstances; and we were informed by a gentleman of the place, that she has turned the exhibition of her person to such account, as to be able, in the course of the present year, to place the sum of 400*l.* in the stocks.

7. *The imperfect manner in which she has been watched.*— As much stress has been laid on the proof afforded by the watching of her person during sixteen days, it may be worth while to inquire in what manner it was performed. The author of the "Account" tells us, that Ann Moore "having consented to be removed, Mr. Taylor (a surgeon of the neighbourhood) went round the town to procure a number of the most respectable inhabitants for the watch; and he made it his first principle, to expunge those who, in his *opinion*, were in the least degree liable to be imposed on, or of a disposition that might be suspected would connive at imposture. He admitted no persons but such as most vehemently objected to the verity of the fact." "Mr. H. Jackson," we are further assured, "having a *thorough knowledge* of the inhabitants, took upon himself the trouble of setting the watch; and he being of the most invincible incredulity, was well qualified for the purpose. When it was known that Nanny had been under watch for forty hours, and was challenging the investigation, *great numbers of people*, merely from curiosity, *came to offer their service*, so that there was not the least difficulty in procuring a sufficient number for the purpose. The principal care that remained to Mr. Jackson, was the matching of people of different qualifications together, in such a manner as to afford a greater security, and that the watch should be constantly and faithfully kept. In order to which, such as man and wife, brother and sister, &c. were never suffered to attend at the same time, nor any persons that were likely to be influenced in her favour. The watch was generally changed every four hours, and, for farther satisfaction, placards were stuck up in different parts of the town, announcing, 'This is to maintain, that Ann Moore has taken no nourishment since Tuesday afternoon, at three o'clock, and is truly and constantly watched. All persons are hereby challenged to disprove the fact, and may watch for themselves, during the further period of time that shall, by medical consultation, be determined to establish

the same.' "* The truth is, that almost every one, who "came to offer" his service, was permitted to undertake the task; and during the sixteen days that the watch continued, not fewer, as we were credibly informed, than from 80 to 90 different persons officiated. Among this number, is it not highly probable, that there may have been some of Ann Moore's private friends, who supplied her with food, and connived at her eating and drinking? We are not told what were the respective characters of the individuals employed; whether they were persons of known probity and veracity; no security is given for their vigilance; no information is afforded as to the mode in which they were superintended; but we are called upon to place unlimited confidence in Mr. Taylor's "opinion" of their liability to be imposed upon, in Mr. Jackson's "knowledge" of their characters, and his skill in "matching them together;" in other words, we are called upon to believe an improbable fact upon the most suspicious of all testimony, upon the *opinion* which A has of the dispositions of B, C, D, E, &c. and of the *knowledge* and *care* which X has displayed in *matching* B with D, C with E, and so on. Can any thing be more unsatisfactory? But granting, for a moment, that the proof was as perfect as it was possible for it to be, and that this trial of Ann Moore was conducted with the utmost strictness and regularity,—what would the inference amount to? Why, that she had fasted sixteen days and nights, a period of time during which it is certainly not impossible that she may have endured the privation; not that she has lived five whole years and odd months without any nutriment whatever.

That the human body can be brought to subsist, for a considerable time, on very small quantities of food, has been long known; and, if we consult the records of medicine, we shall find, that there are not wanting well authenticated instances of even more protracted abstinence than was exhibited on the occasion in question. Thus Doebel gives the history of a hypochondriac, who fasted during a period of 40 days, but died soon after his return to food. And Morgagni, on the authority of Fantonus, mentions the instance of a woman, who obstinately refused to take any sustenance, except twice, during 50 days, at the end of which period she died. In the case which is detailed by Dr. Eccles, in the 5th volume of the Edinburgh Medical Essays, the patient continued, first 34 days, and afterwards 54 days, without either eating or drinking. It is true, that, during part of this time, nourishing injections were used; but, for the last 20 days of the second fast, even that mode of supply was cut off, and the abstinence was complete in every sense of the word. In Dr. Willan's case, the patient persevered in the disuse of solid food till the 61st day, taking only small quantities of water slightly flavoured with juice of oranges, to moisten his mouth. These two last cases also terminated fatally.

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* Loc. cit. p. 21, 22.

The madman, mentioned by Pouteau,* lived 47 days, without taking any thing but a pint and a half of water in the day, and stood constantly in the same position during 38 days of that time: the return to food was followed by a temporary cure of his insanity. That Ann Moore did not altogether refrain from drinking, during the watch of 16 days, is admitted even by Mr. Taylor. "In the course of the first three days of the investigation," says that gentleman, "she swallowed, in the whole, about ℥iss of water; but happening to step into the room while she was swallowing it, the extreme misery of deglutition, and the violent rising of wind resisting its passage to a degree that almost seemed to threaten suffocation, induced me to dissuade her from taking any more, while the experiment that was to vindicate her veracity continued."† The only fact, therefore, that can be learned from this imperfect trial, is, that Ann Moore was not seen taking any *solid* food during the space of 16 days and nights. Before that time, it is acknowledged, that "she had *abundant* opportunities" of eating; and since the watching, which has since so unaccountably allayed all suspicions with regard to her proceedings, she can be at no loss to procure sufficient aliment, from the quantity that is introduced into the house for her daughter, and the other female who lives with her.

8. *Her dread of a repetition of the watching.* On Mr. Thompson's proposing to her a second watching, she said, "that she had been upon her *trial* once, which she would not then have

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* Memoires de l'Academie des Sciences, 1769.

† Med. & Phys. Journ. Vol. XX.

submitted to, but to oblige the *minister*, and for nobody in the world would she undergo a repetition of it. Her attendant," Mr. T. adds, "who is as well-educated a hypocrite as her mistress, was pleased to style it '*a trial for life.*' "[*]

9. *Her dread of all experiments whatever.* Thus, on one occasion, she refused to allow Dr. D. to hold a mirror before her face, in order to examine her respiration; exclaiming, "No more experiments for me! I have suffered enough already from experiments." At another time, she contrived to break a thermometer, which a gentleman had put into her hand, in order to ascertain the heat of her body. It is probably from a similar motive, that she now keeps her mouth shut; apprehending, either that her visitors might put her powers of deglutition to the test, or, that the mere inspection of her tongue might prove the recent introduction of food.

10. *Her concealment of the evacuation of urine.* At the time of the watching, it is admitted, that she passed urine to the amount of a pint in every two days: she has since found it convenient gradually to diminish the quantity, till at last she voids none at all. But there were several pretty strong presumptive proofs of the falsity of this assertion. One of us, in approaching her bed, happened to overturn an utensil, which was placed under it, obviously for her use, and which was partly filled with urine. There was also, as I have before remarked, an offensive urinous smell about the bed, to lessen the perceptibility of which is probably the reason of her insisting upon the window being kept always open.

These circumstances I mention the more particularly, as they led to the detection of a similar imposture, which was practised by a girl in Germany, about twelve years ago, and of which a minute relation has been furnished by Grüner.[†] Like Ann

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[*] Med. and Phys. Journal, Vol. XXIV. p. 312.

[†] Erzahlung der Betrügerei eines Wundermadchens, 12mo. Berlin, 1800. That such impostures were by no means uncommon in former ages, will be abundantly evident from the following list of publications, which I extract from Sprengel and Haller.

Poggii Florent. de puella Germanica quæ biennium fere vixerat absque cibo potuque. 4to. Florent. 1551.

Ger. Bucoldiani brevis enarratio de puella, quæ sine cibo et potu per aliquot annos in pago Roed egit. 8vo. Paris, 1542.

Moore, this girl submitted to a watching of two or three weeks; and like her too, she passed the ordeal with her integrity unimpeached. If I remember right, she was even subjected to it a second time, without any discovery taking place. But, some time afterwards, a bystander observing that her linen was generally in a damp state, and had an urinous smell, (to conceal which, she used to have heated stones introduced into her bed, under pretence of cold at the pit of her stomach, and would never allow the window to be shut, affecting to faint the moment it was closed,) was led to a train of investigation, which ended in the complete exposure of the various artifices to which she had resorted for the concealment of her evacuations.

11. *Her saying, "that she believes a time may come when God will permit her to eat."* She is thus prepared for any discovery that may take place, and can never be surprised at her meals or potations, without a ready excuse.

12. *The acknowledged fact, that she is now in the same, or nearly the same condition of body as when she commenced her alleged fast.* "It is apparent, (says your correspondent Mr. Granger,*) that abstinence *qua* abstinence has no effect upon her

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Catherinæ Binder inedia. 8vo. Heidelb. 1584.

Pasc. Rollin histoire memorable d'une fille d'Anjou, laquelle a etée quatre ans sans user d'aucune nourriture, que d'un peu d'eau commun. 12mo. Paris, 1587.

Franc. Citesii Abstinens Confolentana. 8vo. Genev. 1602.

Pauli Leutuli historia admiranda Apolloniæ Schreieræ, 4to. Bernæ, 1604.

J. Chifflet, asitia in puella Helvetica mirabilis. 8vo. Vesunt. 1610.

Philip Sechtleni, lapis lydius inediarum prodigiosarum, quas plurimi in multos dies, septimanas, menses, et annos protraxerunt. 12mo. Paderborn, 1614.

Magni Gabr. Block, Betänckiande, öfwr Ester jonodottes longwarige fastande i skone. 8vo. Stockholm, 1719.

Joh. Doebel vollstandiger Bericht von Ester Johannsen und ihrem langweiligen Zehnjahrigen fasten. Hall. 1724.

C. J. Lossau Beschriebung eines Casus ineditæ. 4to. Hamburg, 1729.

Charles Fontenelle sur une fille de Grenoble, qui ne boit ni ne mange depuis quatre ans. 4to. Poitiers, 1737.

One of the above mentioned writers, (Block) makes an observation, which is not unworthy of attention, viz. that all the examples of extraordinary fasting have been confined to the female sex. The remark still holds true with respect to the marvellous cases.

* Edinburgh Medical Journal, Vol. V. page 321.

system. The existence of the patient, after having fasted two years, with a countenance not far removed from the appearance of health, will not be looked upon as an effect of abstinence. For many months together, no wasting is observed." Nay, what is more extraordinary, if the descriptions which have been given of her person, by Mr. Granger and others, be correct, it will follow, that latterly she must have increased considerably in bulk; for we did not find the abdomen "so remarkably sunk in," as Mr. G. saw it; we did not succeed, like Mr. Taylor, in tracing, with the finger, the grand trunk of the aorta, "from the place most immediately under the ensiform process of the sternum, where the loose integument is drawn upon it, nearly to its bifurcation," in drawing it "from its situation over the spine," and "holding the skin across it," so as to show "both its shape and pulsation;"* nor did Ann Moore appear to us, as she did to J. L., "the most emaciated creature that ever existed."† Now it has been shown, that a considerable evaporation is constantly taking place from her lungs and skin; nothing, therefore, short of an actual miracle, can solve the problem of her increased size of body, under such circumstances.

13. *The variations and contradictions in her statements.* It would appear, from Mr. Taylor's narrative, that she continued the use of solid food in small quantities till the end of June 1807; but to us she positively averred, that she had taken nothing since the week before Easter of that year. When Mr. Thompson saw her, she acknowledged, that she passed a small quantity of urine once a week, and he understood this to be the case at the time when he wrote, (August 1809); but to us she declared, that she had voided none since the end of August 1808. In reply to a question by Mr. Corn,‡ she asserted, that she *never perspired;* but to us she admitted, that she perspired freely, when she had fits. To the gentleman whose thermometer she demolished, she complained of pain, and cried out upon the slightest touch of the abdomen; whilst she allowed us to use considerable pressure, without expressing the least unea-

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* Medical and Physical Journal, Vol. XX.

† Loc. cit. page 25.

‡ Monthly Magazine, Oct. 1811.

siness. On the contrary, she repeatedly assured us, that we gave her no pain by the force which we employed.

14. *The inconsistency of her actions with her statements.* If the attempt to eat and drink really caused her such "misery of deglutition," as Mr. Taylor expresses it, why did she do either; especially as she had lost all desire of food so early as November, 1806. Her deceit respecting the contraction of the middle finger of her left hand, and inability to use it, has been already noticed. To Mr. Thompson she pretended to be in a state of such weakness, as made it great labour, and even pain for her to attempt to move; but upon his threatening her with a repetition of the watching, "she so completely forgot her situation," says Mr. T. "that she raised herself upright in bed, a position in which we had *previously* learned, she had not been for more than a year, griped her fists, threw her arms and head about with as much strength and ease, as the most healthy woman of an equal age could possibly do, and talked at the same time most loudly and incessantly, from the effect of violent passion." These inconsistencies are alone sufficient to throw discredit on every thing she says.

Other facts and arguments might be adduced; but I trust, that I have collected a sufficient body of evidence to prove, that there are no solid grounds for supposing, that the order of nature is subverted in the person of Ann Moore, but on the contrary, that there is every reason to believe, that her abstinence is feigned, and her sufferings, in a great measure, simulated. Such an inference Mr. Granger is pleased to denominate *an hypothesis;* but the hypothesis appears to me to be on the part of those who imagine, that a human being can exist, in a state of comparative health and strength, during a term of months and years, without any of the ordinary means of nutrition; and the only wonder remaining in my mind, is, that medical men should be found to lend their sanction to such extraordinary attestations as we have seen concerning the case in question.

Golden Square,
November 25th, 1812.

Observations on Tumors within the Pelvis, occasioning difficult Parturition.

BY H. PARK, ESQ. SURGEON AT LIVERPOOL.

[From the Medico-Chirurgical Transactions, Vol. II.]

As I have reason to believe that tumors within the female pelvis, occasioning difficult parturition, are not of very frequent occurrence, I hope it will not be altogether useless to young accoucheurs, if I communicate some account of the few that have fallen under my observation. I can at least say, that I should have been happy to have possessed, 30 or 40 years ago, the information they have afforded me; although, perhaps, by that assertion, I shall only prove myself culpable, for having been devoid of sufficient knowledge of the subject before these cases occurred.

The first case of this kind I saw, was somewhat more than 20 years ago, in a poor woman, under the care of Mr. Peacock, surgeon of this town, in conjunction with my friends and late colleagues, Dr. Lyon and Mr. Alanson. She had been in labour quite as long as we thought it safe to trust to the natural efforts, without the head being able to descend at all into the pelvis. Owing to a tumor, situated between the vagina and rectum, of a globular figure and firm texture, which left but very little space between this tumor and the pubis, we soon determined to open the head, and endeavour to deliver by the crotchet, which was effected without any very great difficulty. I, however, now think we were blameable for adopting that determination, without first attempting to diminish the bulk of the tumor. After delivery, we were somewhat surprised to find that the tumor had totally disappeared; and were divided in our ideas of the cause, viz. whether it had been some kind of hernia, which had receded as the child got below it; or whether it was a tumor of the encysted kind, that had been ruptured by the force of bringing down the head. I inclined to the latter opinion, and thought I could feel an orifice near the central part of it. I learned that the poor woman had more children afterwards, without any recurrence of the tumor.

The next case was that of Mrs. S——, whom I was engaged to attend in her first confinement. On my first examination, I found the pelvis nearly filled by a tumor similar to the last mentioned, of a very firm texture, situated between the vagina and rectum. It was with some little difficulty I could pass the finger between the tumor and the pubis, so as to reach the os internum, till it became a good deal dilated. I almost despaired of this delivery being accomplished by the mere efforts of nature. In this, however, I was agreeably deceived; Mrs. S—— was delivered naturally of a living child, though not without a very severe struggle of a great many hours duration. After this she had four miscarriages and premature births in succession, each time of twins, from the the fourth to the end of the seventh month. The seven months' children were the last of the four; and these were likewise born without any forcible measures.

During these pregnancies the tumor, by its pressure on the urethra, frequently occasioned retention of urine, so as to require the use of the catheter; although I could not, by the touch, discover much change in its bulk. In one of these attacks, I was a good deal foiled in my attempt to introduce the catheter; when, on forcibly pressing back the tumor with two fingers, the urine flowed without the assistance of the instrument. I therefore instructed her husband to do this; and she had no farther occasion for my attention on that account.

In her next pregnancy she went on to her full term, of a single child, and it was in this labour we were called upon to take some decisive measures respecting the tumor; for, after the os internum was fully dilated, and the membranes ruptured, she passed the whole night in most severe labour, without the smallest advantage; the head constantly pressing on the upper part of the tumor, but without being able to descend into the pelvis in the smallest degree. In this, as well as in the last labour, I had the assistance of Dr. Lyon; and, after some deliberation, we agreed to make an incision, in a very cautious manner, into the tumor, which, from Dr. Lyon's apprehension of hernia, was preferred to a puncture with a trocar. The instrument I employed was the lancette cachée, used in pharyngotomy; with which, conducted on my finger to a part which I thought felt thinner than the rest, I made three or four slight scratches, till I thought the parietes felt thin; and then, by pressing my finger strongly on the part, I forced it into a large cavity, which felt as if it was filled with a very gelatinous fluid. In this, however, I was deceived, for it proved a bloody serous fluid, with a number of flakes of membranous substances, resembling the strippings of tripe; some of these were as large as a quarter of a sheet of common paper. The tumor was completely evacuated by the next pain; and in two or three more the child was expelled. Mrs. S—— recovered but very slowly from this delivery. A very considerable discharge ensued from the incision, which engaged so much of her attention as considerably to deprive her of sleep; and was so offensive as to be perceived immediately on opening the outer door of the house, accompanied with a good deal of pain in the loins, debility, and symptomatic fever.

These continued, with little abatement, nearly three weeks; and, with gradual decrease, seven or eight weeks more, before they entirely ceased, and her health became restored. It appeared afterwards, that the healing of this tumor, and consolidation of its cavity, must have occasioned a considerable degree of stricture; for in her next labour, after the os internum was fully dilated, and the membranes ruptured, strong labour pains, of seven or eight hours duration, were required to force the head through the pelvis. And in the labour again succeeding to that, which proved an arm presentation, about the end of the eighth month, I found a considerable resistance to the passage of my hand, in search of the feet, made by a stricture, which evidently was not the os internum.

The next case was a poor woman in Shirkdale, about two miles from Liverpool, whom I was desired to see, in conjunction with Dr. Lyon, and who had been two days in labour, attended by two of the younger surgeons of this town. We found the difficulty to arise from a considerable tumor, situated like those already described, filling up a considerable part of the pelvis, but of a less firm texture, and not so globular, being of a more irregular oblong figure. The woman's strength was not very much exhausted, and the head pressed more into the pelvis than in either of the former cases. We therefore gave it as our opinion, that they might safely give nature a longer trial; and that the woman might easily be delivered by the crotchet, if it should become necessary, not deeming this a case in which it would be eligible to hazard an incision. We learned however, that she was delivered by the mere efforts of nature on the following day; but were afterwards much concerned to hear, that she died of vomiting and constipation about three days afterwards, which information we did not obtain till some days after her interment, otherwise we should have been very desirous to have inspected the body. We conceived it not improbable that this might have been a case of intestinal hernia.

My fourth case was one in which I was consulted by a surgeon, who had been attending the poor woman nearly three weeks, for what he had conceived to be a retroverted uterus, and had made some ineffectual efforts to reduce it. The mistake was easy to be made, there was so much similarity in the symptoms, viz. considerable pains in the hypogastric region; much forcing down, with difficulty in voiding urine and fæces; a large round tumor seated between the vagina and rectum, and the os tincæ situated close to the os pubis, and so high as to render it rather difficult to reach it. The poor woman had missed her menstrual periods about three months. The surgeon had repeatedly introduced the catheter without finding any quantity of water, and without giving any relief. Before he spoke to me, he had consulted Mr. M'Culloch, a more experienced accoucheur, and of more accurate discernment, who had told him, he thought he was mistaken in his idea of a retroversion of the uterus. On examining, I was clearly of Mr. M'Culloch's opinion; the os tincæ, though close to the upper edge of the symphysis pubis, was in its natural direction, as much as the pressure of the tumor would admit, pointing downwards, not forwards; and the length of the cervix proved that the uterus was not impregnated. The finger could not be passed up at all behind the tumor. A few days before I saw her, she had had rather a copious discharge of blood per vaginam, but without any relief. The poor woman's health and strength were declining very fast from her sufferings; and it was evident she could have no relief, unless this tumor could be either dislodged or diminished. I attempted the former, by introducing all my four fingers and palm of the hand, but without the thumb, and attempted to raise it. The resistance was rather considerable, and the woman complained a good deal; but I thought the tumor yielded, and I increased the force notwithstanding her complaints, by which I raised it completely above the brim of the pelvis. She said she thought something burst within her, but I was much inclined to believe it was merely breaking some adhesions the tumor had formed. She was much relieved; and very soon after this reduction, her evacuations by urine and stool became easy and natural. Five days afterwards she was attacked with vomiting and diarrhœa, after which her health daily improved; and the event proved that she had not been pregnant. What would become of this tumor, in case she should prove pregnant, may be a matter of considerable uncertainty.

My fifth case was one to which I was called by Mr. Chyers, a very judicious and experienced accoucheur of Prescot: the patient resided in West Derby, about half way between Liverpool and Prescot. The woman had been a considerable time in labour, till very much exhausted, yet making very little progress indeed. A tumor, very similar to those of my first and second cases, but not quite of so firm a texture as that of Mrs. S——, filled the pelvis so much as to keep the head up almost out of the reach of the finger, and to have rendered it extremely difficult to have delivered by the crotchet, provided no other means could have been devised. It was therefore immediately determined to make an incision in the same manner as with Mrs. S——, which was done, but with a different result. No cavity was discovered; nothing discharged but blood; nevertheless great advantage was gained, for the head immediately dropped nearly two inches, so as to render it easy to deliver by the crotchet, if necessary. Mr. Chyers was therefore left to his own discretion. He waited several hours; when finding that the natural efforts gained him no farther advantage, that the draining was considerable, and his patient in a sinking state, he perforated the head, and delivered in about three hours. The woman recovered without much difficulty; and Mr. Chyers informs me that she has had another child, of which her delivery was so expeditious, that they had not time to send for him.

My sixth and last case is that of Mrs. C——, a lady between 30 and 40 years of age, whom I am now attending in her first confinement. On my first examination, on the morning of Wednesday the 22d May, I found a tumor very similar to that in the last mentioned case, except that I felt more confidence of its containing a fluid. It filled the pelvis so completely, that I did not, at that examination, reach the os internum at all. In the evening, after slight pains had continued all day, I reached it, with some little difficulty, above the symphysis pubis, and found it dilated just enough to admit one finger, and could feel the head presenting. That night passed over with little alteration, and the whole of the next day without much more. Very strong pains then came on, and continued the whole of Thursday night, which dilated the os internum to the diameter of about three inches, which seemed to be all the natural efforts could do; the membranes were ruptured, but the head could not descend, nor produce any farther dilatation, but rested on the top of the tumor and the upper edge of the pubis, in which latter part it occasioned a most acute sense of pain. I now advised Mr. C. to take another opinion, before I proceeded to any farther measures; on which my friend and late colleague, Mr. Alanson, was consulted, and agreed with me in thinking the tumor contained a fluid, and in the propriety of opening it, if the natural efforts did not soon produce a better effect. Soon after this, the pains changed very much for the worse, becoming distressingly acute, but wholly irregular and spasmodic, without any thing like regular effort. Large doses of opium were given through the day; and in the evening the regular forcing pains returned, when I determined to make an opening into the tumor, at first only by puncture, but more, if found necessary. This, however, proved sufficient; the contained fluid, which appeared to be merely a bloody serum, drained off so as to render the tumor quite flaccid, and to diminish its bulk at least two-thirds, and as the head descended into the pelvis, it became totally evacuated. Immediately after the puncture was made, the head began to dip into the pelvis, and to dilate the os internum more fully; but the child proving a large one, it required eight hours more of strong labour to complete the delivery, although the tumor could not oppose any farther resistance. The long pressure on the head destroyed the child. It is now the ninth day from delivery, and Mrs. C—— has experienced no farther consequences from her hard labour, than some pain and difficulty in passing her water, owing to the long pressure of the head on the pubis, and this has now nearly subsided. She has not any such discharges as followed in the case of Mrs. S——, but merely such as are common to all women at this period.

An account of the salutary effects, and beneficial influence of Marsh Miasmata in Pulmonary Diseases, with two remarkable cures at Ostend, of Hæmoptysis, and of Consumption; in a letter communicated by the late Rev. Dr. ABEEL, *to Professor* WILLIAM HAMERSLEY, *of this city, and by the same, to the Editors.*

[From the New-York Medical Repository, No. LX. for February, March and April, 1812.]

SIR,

My absence has prevented me from sending such remarks as I can do from experience in my own case, with respect to the curative effects of the marshy atmosphere of Ostend in Flanders, in affections of the lungs and spitting or vomiting blood. It would give me very great pleasure to offer any hint, which might stand a chance to be useful to Mr.——, or to any person connected with Col.——; but I must leave to the faculty to determine the nature of the case, and confine myself merely to my own case, and the situation of those consumptive persons, who were afterwards completely cured by taking my advice, and removing to Ostend.

I caught a violent cold and neglected it; a spitting of blood, and by degrees ordinary consumptive symptoms occurred. Dr. William Saunders was my physician. I followed his orders exactly: I then lived in London. I was removed to the country, and for six months, I lived on milk and vegetables. I tasted neither fish nor flesh of any kind; nor wine, spirits, or beer. I took constant exercise in an open carriage, or on horse-back; still the consumptive symptoms, attended with cough, hectic fever, spitting and vomiting of blood, rather seemed to increase than diminish. I was daily weaker and more emaciated. Bleeding or vomiting of blood, used to relieve me from the interior wheezing in my chest, and from the dimness of vision; but both together or separately always would return.

Dr. Saunders advised me to travel about the country, by way of amusement and change of scene. With two friends, saddle-horses, and a phaeton, we viewed all the south-west of England, very quietly and at our ease; having travelled about 1000 miles in six weeks. While at Plymouth, in the month of June, Dr. Mudge insisted on my wearing flannel next my skin, all over my body; this seemed to diminish the necessity of bleeding in the arm, to once in three days, in place of three times a week. He agreed with Dr. Saunders in every point, and both advised me to lose blood, (6 or 8 ounces) every time I perceived the dimness of sight, to prevent the vomiting. Before that, I was sometimes forced to be bled four times a week. My cough was sometimes better; the spitting of matter and salt tasted globules was sometimes less; but the main disorder was in fact unabated. When I returned to my lodgings in the country, near London, Dr. Saunders advised me to try the marshy foggy air of Ostend, for which he took the hint from a very old book, published by a Dr. Ker, who asserts that Ostend (in his time) never failed to cure consumptions.—I set out three days after my return from my jaunt in Devonshire, Somersetshire, Cornwall, &c. &c. and in driving towards Dover, vomited blood often out of the doors of the carriage. I was three days at sea in bad weather: I could hardly walk when I landed; I lived there on vegetables and milk, having acquired rather a dislike to any other food. From that time I felt no more dimness of sight, and was able to dispense with bleeding. I never applied more to physicians or surgeons. In eight or ten days I was so strong that I could hardly credit the rapid change myself. In this situation, Sir John Peter, the British consul, induced me to live with him, and leave off my milk and bad water, to make use of Moselle, or small Rhenish wine at my meals. Nothing seemed now to hurt me; my appetite returned, my cough disappeared, with every symptom of spitting of blood. Chance made me now acquainted with the worthy Dr. Resolt, an excellent physician, living at Ostend. He assured me I was cured, and said he had never heard of any native of Ostend, that had been consumptive. In three weeks after my arrival, I sailed again for London, and brought over my whole family, and since that time to this, almost thirty years, I have had no sort of complaints of that nature; but I have followed with attention the advice Dr. Saunders, Dr. Mudge, and Dr. Resolt, gave me, *never to keep a cold forty-eight hours;* though few people take less care of themselves than I do; but I never sit in wet clothes, or with wet feet; and I prefer the floor to a damp bed, or damp sheets. I fear I have now gone into a tiresome detail, yet it may be satisfactory to Mr. —— to know the particulars; to which I shall add, that I lived at Ostend near seven years, during which time I had many opportunities of bringing persons there who were consumptive, and all were cured. Among the rest, one young lady I brought down from Brussels, with her mother, Lady Torrington. Georgiana Byng was then about seventeen; I had left her in good health some months before; when, arriving at Brussels on business, I went to dine next day with Lady Torrington, and perceiving Georgiana was not at table, asked her father where she was, he touched my elbow, for if her mother heard it, she would leave the table. He soon afterwards told me she was at the point of death, not able to walk across her room, given over by the faculty and expected to live only a few days, her complaint a galloping consumption. I put him in mind of my own case, which he knew, but it had escaped him; and I added, that since her physician and even her parents had no kind of hopes, I wished that they would give her to me; he consented, provided her mother was willing. My request was no sooner made to her after dinner than she expressed a strong desire to set out with me next morning, when I was to go at any rate, if I thought I could get her to my house alive; in this I succeeded with much difficulty, but the eighth day after my arrival, she took my arm and walked round the ramparts of the town without resting. The twenty-first day, she returned to her father's in perfect health. She afterwads married Lord John Russel, to whom she had several children before she died, and had she lived, she would now have been Dutchess of Bedford; she never forgot that she was my adopted daughter and always called me Father. I have said enough to prove the quality of the air of Ostend in consumptive cases; I wish I could say wherein this quality resides, but I will not pretend to what I do not know, nor venture to ascribe it to a larger quantity of azote and hydrogen, than common air. My opinion is, that though the sea air may form a part of the Ostend atmosphere, with certain winds, the chief part of it is combined with marsh miasmata, which we know to be the chief cause and origin of intermitting fevers, and these are extremely troublesome at Ostend, but under the care of the good Dr. Resolt, that much preferable evil to consumptions is easily cured. I am confident there are many situations in America equal to that of Ostend, and much resembling it. I have never been in the vicinity of Norfolk in Virginia, but from accounts of others, I imagine positions may be found that way, or in some parts of the sea coasts of the Northern States, where the spring tides flow into marshes behind and renew at times the brackish stagnated water. Perhaps even the salt water may be the least part of necessary composition; a very marshy low situation may probably do equally as well. I cannot yet ascertain whether any consumptions exist on Fausse Riviere, or even at Point Coupé, but agues I am told are frequently there. At all events I do firmly believe that hot tea, an abuse of too warm liquids, bad lodgings where the night air is not excluded, damp beds &c. would create a consumption even at Ostend.

Yours truly,

W. H.

Case of Amputation at the Shoulder Joint.

Drawn up by John Henry Cutting, M. D. Communicated by Dr. Marcet, For. Sec.

[From the Medico-Chirurgical Transactions, Vol. II.]

Amputation at the shoulder joint has now been so frequently and successfully performed, as to render it unnecessary to mention the result; but it will be seen, by the following case, that this operation may be performed with little hazard, under circumstances of the most disadvantageous and appalling kind.

Catherine Coulson, aged 30 years, unmarried, was admitted into Guy's Hospital, under the care of Mr. Astley Cooper, November 29th, 1809, on account of a firm, equable and immoveable tumor, situated at the upper and external part of the left arm, so high up, that, on a superficial inspection, it seemed to be connected, not only with the humerus itself, but also with the clavicle and scapula, rendering it probable, that it had an attachment to the glenoid cavity of the latter bone. The arm, however, could be moved forwards and backwards; but, in consequence of the weight of the tumor, and the great attenuation, or perhaps even complete obliteration of part of the deltoid muscle, produced by its pressure, the voluntary motion upwards was lost. On minute examination, it was ascertained, that this enlargement arose from the superior part of the humerus; but as symptoms of inflammation of the shoulder joint were present, a doubt still remained, whether the morbid action, which caused its formation, had commenced in those portions of bone which entered into the composition of that part. That the humerus itself was diseased, seemed evident, from an obvious enlargement and irregularity, felt at its inner part; commencing high up in the axilla, and ending about four inches from that point. The circumference of tumor, at its most bulging part, (the admeasurement being taking parallel with the arm) was 25⅜ inches; and a line carried round its most prominent part, so as to surround both it and the arm, measured 24⅛ inches.

This swelling was in general covered merely by common integuments; it was extremely painful when handled, and the skin over it felt much hotter than natural: upon it, many large veins were ramified. Motion of the arm gave considerable pain, which was referred both to the tumor and shoulder joint; and the patient complained much of the weight she had to support. Her appetite was impaired, and she had some degree of fever.

After her admission, the account collected of the commencement and progress of this disease, was the following: About three years and a half previously, after having once struck the summit of the shoulder forcibly against a wall, afterwards fallen on it, and repeatedly received blows on the same part in mangling, she observed a firm tumor, about the size of a nutmeg, at the superior part of the arm. Subsequently to this, she was always affected with pain about the shoulder, when employing the limb freely. The enlargement gradually increased; and about two years and a half before, when it was equal in size to a common tea-cup, she was admitted into Guy's Hospital by Mr. Cooper. She remained under his care six weeks; during which time repeated blisters were had recourse to, without benefit. In about six months, she again applied for admission, and was re-admitted under Mr. Cooper. The tumor had then attained the size of a pint bason; and the motion of the arm had become less free than on the former occasion, though not so considerably as to prevent the pretty general use of the limb. For this reason, and because her constitution had suffered little, she would by no means consent to the operation of amputation at the shoulder joint, the necessity of which was strongly urged; and, at the expiration of eleven months, she quitted the hospital. Within the year and half antecedent to her last admission, the augmentation of the tumor had been very rapid; but she did not notice the enlargement mentioned to have been observed in the humerus itself, till six or seven weeks previously. Although her nights had been long restless, her general health continued good till the 26th November, when she was attacked with severe pain in the tumor (which felt hot) and about the shoulder, with loss of appetite and languor.

From the period of admission to the 8th December, blood-letting from the veins over the tumor, was twice employed, which diminished the pain and tenderness. The blood was sizy.

As the patient's arm had now become useless, and her sufferings, both from the weight and the symptoms under which she laboured, were very great, she was prevailed on, without much difficulty, to undergo an operation, which was speedily concluded on, and performed on the 8th December. The state of the deltoid muscles, before mentioned, prevented the possibility of executing it in the manner usually directed; for no flap, except of common integuments, could have been preserved. It was concluded, therefore, that the most advisable plan would be, to aim at covering the wound with those portions of integument and muscles, which anteriorly and posteriorly connected the arm to the trunk of the body.

The first step of the operation, was to secure the axillary artery. An incision, therefore, was made in its direction, high up in the axilla, two ligatures put on it and secured, when a division was made between them. The application of a ligature on the part of the artery most distant from the heart, was to prevent the possibility of any hemorrhage from such anastomosing vessels as might empty themselves into it. An incision was next commenced, immediately anterior to the acromion process of the scapula, brought forwards, and ended in the axilla, passing just below the end of the artery on which the ligature was applied; and another was carried from the same point posteriorly, and made to meet the former one. The next part of the operation consisted in the gradual division of the muscles surrounding the joint, and the application of ligatures to such vessels as it appeared at all probable might furnish free hemorrhage. These, being numerous and large, in consequence of the great size of the tumor, it became necessary to secure ten arteries. As a further precaution, also, against any bleeding which might have taken place, either from returning vessels, owing to the circulation kept up by undivided branches of arteries, or from regurgitation, the veins accompanying the axillary and posterior circumflex arteries were tied by two ligatures each, and divided at the intervening space. The capsular ligament being at length laid bare, an incision was made into it, and the cavity of the joint exposed, which was filled with coagulable lymph, of a reddish colour, and gelatinous consistence, mixed with some serum or synovia. The arm being removed, the glenoid cavity was accurately examined, and presented no mark of disease: the internal surface of the capsular ligament was more vascular than natural, but the articulating surfaces were not destroyed. The cartilage was pared from the glenoid cavity, in order to facilitate the process of granulation; and after all hemorrhage was stopped, the integuments were brought together, and secured in apposition, by three sutures and straps.

The patient underwent the operation pretty well, although she had twice fainted, and was extremely apprehensive previously. Immediately after, she was very restless, and complained much of violent pain of the wrist and elbow of the amputated arm. Her pulse was 108, and rather weak. Thirty drops of tincture of opium were directed; and in consequence of vomiting soon after these were taken, the same dose was repeated. In a short time she became tolerably composed, and lay quiet during the greater part of the subsequent night; but had no sleep till about one o'clook on the following morning. Severe pain, and a sense of pricking, similar to that produced by thorns and thistles, were much complained of, as if affecting the amputated arm. She had much thirst through the night, and slight cough.

On the 9th her pulse was still 108, and she continued to be affected with occasional slight cough: the tongue was rather white, and the thirst remained; but the skin was cool and moist. She still complained much of the pricking sensation; but, in other respects, felt pretty well. During the night following she had some disturbed sleep.

Her pulse, on the 10th, had risen to 120, but she complained only of the deceptive sensation, and had yet slight cough: the skin was moist. As she had had no evacuation from the bowels since the operation, ℥j of sulphate of magnesia was directed to be given, with a diaphoretic mixture, composed of acetate of potash and mint water every third or fourth hour. In the course of the afternoon two stools were procured, and the pulse sunk to 108. She rested pretty well during the night.

On the 11th, the pulse was 100 in the morning, but during the day varied from that point to 120; it did not, however, attain the latter point till towards evening, and after she had been visited by some friends. Slight cough continued; the tongue was pretty clean, the thirst lessened, and the skin moist. She rested ill at night, on account of boisterous weather.

On the 12th, the pulse varied from 112 to 120. Slight cough still occurred at times. The skin was rather hot and dry; but she felt pretty easy, though numbness of the arm was sometimes much complained of. She slept a little during the day, and had two evacuations from the bowels. There was a slight discharge from beneath the straps. A dose of the diaphoretic mixture mentioned above, without any sulphate of magnesia, was ordered to be given every two or three hours.

On the morning of the 13th the pulse was 128; at noon 120; and in the evening 120, and strong: the cough recurred at times. The skin, however, was less hot, and the tongue pretty clean, nor was the thirst urgent. Towards evening, her face became flushed; she seemed very irritable, and was extremely impatient to have her position changed. Through the day she had two stools. No particular pain was complained of about the wound, but the numbness and pricking sensation, as if extending down the arm she had lost, was very troublesome; and the patient was very often impressed with the idea of possessing the ability to move the thumb and fingers of it. The discharge from the wound was moderate. The mixture was continued.

The pulse varied on the 14th from 108 to 120. The cough was better; the tongue was pretty clean; she complained of little thirst, and the skin continued in general moist and cool. She had five stools through the day, the two last of which were liquid. The discharge from the wound was still moderate, but the straps were rather offensive.

She was ordered 15 drops of tincture of opium at bed time, and the straps were moistened with vinegar and tepid water.

On the 15th, the pulse in the morning was 120; in the evening 132, and strong. The cough continued better; the skin was pretty cool, and there was some tendency to sweating. She made no particular complaint, and eat a small quantity of boiled fish with good appetite. In the morning she had three stools; in consequence of which ten drops of tincture of opium were given her. She slept well at night.

The straps were removed. One of the sutures had ulcerated through the skin. Some points of the wound seemed to have united by adhesive inflammation, and granulations had shot from others. There was no pain or swelling, and the discharge was moderate. Two vesicles, probably occasioned by the recumbent posture, had arisen on the skin covering the left scapula, but without any considerable inflammation.

Straps were again applied, to retain the sides of the wound as near as possible together, and a fold of lint placed over them, in the direction of the wound.

The pulse, on the morning of the 16th, was 120; during the day, it got down to 108, and was full: the cough had not wholly ceased, and she still complained of numbness of the amputated arm, as far as the fingers: her appetite was good, and she wished for wine. Had three stools. The discharge from the wound continued moderate. At night she slept well.

She was allowed to have ½lb. porter daily, and the straps were wetted with vinegar and water, on account of the fœtor.

On the 17th, the pulse varied from 108 to 120. She complained of pain of the left scapula, and still of numbness, referred to the arm of the same side. In the morning she had some tormina, which were removed by 15 drops of tincture of opium. She took food and porter with good appetite, and slept well.

The wound was examined, and the granulations appeared healthy. The discharge was more copious than before, and some pus could be squeezed from the inferior part of the wound. Two ligatures came away, and the sutures were ulcerating through the skin. The cuticle was found to have been rubbed from the blistered part noticed on the 15th.

The wound was dressed as before, and to the surface which had been blistered, a cloth, wet with vinegar, was applied. The patient was directed to lie more on the right side than before; and in order that she might have fresh air, a window was ordered to be opened at 10 A. M. and shut at 4 P. M. daily.

On the 18th, the pulse in the morning was as low as 90; but in the course of the day as high as 120. Slight cough continued. She complained of nothing, save numbness of the arm. As she had three stools during the day, 10 drops of tincture of opium were taken. The discharge continued moderate. She slept well.

The pulse, on the 19th, was in general about 108, fuller and stronger. She had four evacuations, and took therefore 10 drops of tincture of opium.

The wound was dressed: three ligatures, and the remaining two sutures, were withdrawn. The discharge was moderate, and much diminished from the lower part of the wound. The process of granulation was observed to have advanced, and the rubbed part on the back was healing.

During the 20th, 21st, and 22d, the pulse varied from 96 to 104, and was of good strength. The cough ceased on the former day. She slept well; the appetite was good, and she complained only of the numbness. In consequence of too free evacuations from the bowels, opium was given, under the form of tincture, on the 20th and 21st.

On the 22d the wound was dressed, and had considerably diminished; the granulations looked florid, and the discharge was moderate: two ligatures were taken away.

On the 23d, 24th, and 25th, the pulse was about 96, and she continued pretty well. On the latter day, the wound was dressed, and two ligatures were removed.

From the 26th to the 28th inclusive, the pulse varied from 92 to 108; and she felt pretty well. On the 28th, the edges of the wound were considerably nearer each other than they had been; the granulations looked well, and the discharge was still moderate; but a small quantity could be squeezed from near the inferior part of the wound, as if from a sinus.

During the 29th and 30th, she continued pretty well, and her pulse was 92. The wound was dressed on the 30th, and looked well.

On the 4th January, in the morning, no change in general symptoms had taken place: the pulse was 96. The wound was less than before: at its inferior part there was a slight red efflorescence on the skin. The discharge was moderate, though rather dark coloured. On the afternoon of this day, she rose, by permission, for the first time since the operation; and had not been up ten minutes, when she was attacked with a sense of fluttering within the chest, and was obliged to return to bed. She had, shortly after, one small and fœtid alvine evacuation (although she had passed a copious one shortly before), and was seized speedily with vomiting of a bitter matter. She slept afterwards, however, pretty well, and sweated through the night.

On the 5th the pulse was 120; the face somewhat flushed, and the tongue rather foul and dry. She made, however, little complaint, except of pain; referred to the amputated arm, which seemed to be placed sometimes posteriorly and sometimes anteriorly.

One strap was removed, and another cut, so as to ascertain whether any pus was confined beneath them, to produce constitutional irritation; but only a small quantity exuded, and the discharge, on the whole, was moderate.

She was ordered to have sulphate of magnesia, with the diaphoretic mixture, as formerly, and 25 drops of tincture of opium in the evening; but as the former had not operated at night, the latter was not given. She had some sleep.

On the morning of the 6th she had three stools: the pulse was

120, rather full and strong. She had some return of cough; the skin was hot; the tongue dry, and somewhat foul, and there was thirst. She made no other complaint but of considerable pain, as if of the arm. The wound looked healthy; and the three ligatures which remained, were found to be very firm.

Ten drops of tincture of opium were directed to be given every six hours, and the diaphoretic mixture, with sulphate of magnesia, to be repeated. Four straps were applied on the wound, and a poultice over them.

Two doses of the opiate were given, which produced drowsiness, and she rested pretty well.

The pulse was 120 on the morning of the 7th, full and strong; the tongue rather white, but she had little thirst: her skin was moist. She had still some cough. Her countenance was languid, and she complained much of pain, and sense of weight, as if of the amputated arm. Appetite impaired.

Animal food was prohibited, and the opium omitted.

The mixture was repeated, and poultice continued.

During the afternoon of this day she had four stools. She complained, in the evening, of sense of heat at the anterior part of the wound; but, on examination, no preternatural appearance was observed. The granulating surface, however, was observed to project beyond, and overlap the straps at two points: these, therefore, were made to pass over, and in some degree compress such exuberant portions. Fifteen drops of tincture of opium were given at night, in consequence of a fifth evacuation from the bowels. She had no sleep till twelve or one o'clock, but slept well afterwards, and sweated.

On the 8th the pulse was 112, intermitting one beat in every 10 or 12. The skin was cool; the tongue rather dry, but no thirst was complained of; and she felt pretty well, although the pain referred to the amputated arm was sometimes troublesome. She was more cheerful, and had some return of appetite.

She was allowed animal food, and the poultice was ordered to be continued. On the following night she slept extremely well.

9th. The pulse was 96, regular and firm; she had slight cough; her countenance was cheerful, and she made no complaint, except of pain as before: her appetite was good, and she had one stool. At night she slept well, and had sweating.

10th. Pulse at 92; the pain continued; the countenance was again languid; the wound looked well.

On the 11th the pulse was 104: she had rested well, and only complained of the usual pain; but the countenance was anxious. As she had had no evacuation by the bowels since the 9th, sulphate of magnesia was given, and one procured. The wound looked well; had diminished, and discharged very little.

An unsuccessful attempt was made, for the first time since the 6th, to withdraw the ligatures.

From the 12th to the 14th, the pulse was at 88, and no other change took place. On the latter day, the ligatures were found to be extremely firmly attached to the parts they surrounded. The poultice was then omitted; and, as she had had no stool since the 12th, the sulphate of magnesia was prescribed.

On the 15th and 16th the pulse was 84, and of good strength; occasional pain of the arm was all she complained of. The wound on the 16th had lessened, and discharged little. The ligatures were still found to be firm.

From the 17th to the 19th inclusive, the pulse was about 80 or 84, and she made little complaint. The upper part of the wound, on the 19th, was nearly covered by newly-formed skin. An efflorescence had appeared round the wound, supposed to have been produced by the straps. The action of the adhesive plaster, therefore, on the parts affected with it, was prevented, by placing lint beneath the straps on each side of the wound. On the 19th she was allowed to quit her bed, and remained up for two hours: she staggered much in walking, but her countenance was natural.

She sat up a good deal on the 21st, but could not stand near a fire without feeling faint. Her pulse was 80; and she made none but the usual complaint. She still felt as if she could move the fingers of the lost extremity, but any attempt to do so, produced a numbness, as if extending up the arm, with pain of the shoulder.

On the morning of 22d the pulse was 72, and she continued pretty well; but in the evening she had a severe attack of gastrodynia, which was relieved by a dose of tincture of opium and spirit of peppermint: her pulse was 80.

The wound was dressed, and the ligatures could not be withdrawn. As the efflorescence had not diminished, lint, wetted with a solution of acetate of lead, was applied to it.

Nothing particularly worthy of notice occurred from the above period to the 30th, when her pulse was 72, and firm; and she was in general well, though she could not sit within less than six or seven feet of a fire without feeling oppressed. She still complained of pain of the arm. The efflorescence had nearly disappeared.

As the ligatures could not be withdrawn, it was deemed proper to hasten the ulcerative process, necessary for their separation, by artificial means; to one of them, therefore, a small roll of strap was so attached, that it could be readily twisted.

On the 31st December and 1st January, she complained of very severe pain of the arm, particularly when the ligature was twisted. Her pulse was 90, and she slept ill.

The strap was cut from the ligature. The pain diminished, and the pulse got down to the natural standard.

On the 5th the ligature, supposed to be that which secured the axillary artery, came away easily.

One of the two remaining ligatures was withdrawn on the 10th; cicatrization had considerably advanced, and the granulating surface of the wound was about two inches long, and at its broadest part, i. e. around the ligature, one inch wide.

After this period the health of the patient continued to improve; and in a short time she thought herself as well, in general, as ever she had been. The menses, which had been present some days when the operation was performed, recurred six weeks after it, and continued afterwards regular. During the month of March, as the ligature seemed still firmly attached, and any attempt to withdraw it occasioned considerable pain and sense of fulness of the shoulder, and severe numbness, as if extending from the fingers of the amputated arm to the clavicle, an attempt was for some time made to dilate the orifice through which it passed with lint, so that, if possible, its attachment might be discovered and divided. Almost the only part remaining, at this time, to be covered with skin, surrounded this ligature, and was about one inch in length and ¾ths in breadth. No disposition was shown in it to heal, until subsequently to the 28th of March, when the last ligature was withdrawn. Cicatrization now advanced; and in about three weeks, the formation of the new cuticle was completed. She still is impressed with the idea of having the arm, and that she can move the fingers; attempts, however, at such motion, are always attended with pain, and sense of pricking of the whole extremity; which, as before, when she is in the recumbent posture, feels to be placed over the breast; but when erect, it appears to be placed posteriorly.

Dissection of the Tumor.

The weight of the tumor, including that of the os humeri, was eleven pounds.

The periosteum, in a considerably thickened state, covered the surface of the swelling.

The principal part of the tumor was composed of cartilage, which adhered firmly to the external surface of the bone, and to the inner side of the periosteum.

The bone was much increased in its diameter. Where the tumor was attached to it, numerous processes of bone passed into the cartilaginous matter.

The cancellated structure of the bone was obliterated opposite the disease, and a red pulpy mass was found in the cancelli, at that part at which the otherwise healthy bone joined the diseased.

Cases of Tic Douloureux cured by Arsenic; Tumors of the Tongue cured by Mercury; recovery from an excessive Dose of Laudanum; and Observations on Herpes of the Prepuce. By ROBERT M'KECHNIE, Surgeon, Paisley, and Member of the College of Physicians and Surgeons, Glasgow.

[From the Edinburgh Medical and Surgical Journal for July, 1811.]

THE following papers are sent for insertion in the next number of the Journal, if they are deemed worthy of a place. The case of tic douloureux I have hitherto refrained from communicating, because it is well known that this disease often returns, after an apparent cure has been effected, and in the present instance, I had frequently seen my patient relapse. But so long time has now passed, during which he has enjoyed as good health as any man of his years, that I hope I am warranted in viewing the cure as permanent. As I am not satisfied respecting the nature of the disease, I will not presume to make any observations upon the modus operandi of the treatment. I am convinced that in this case the affection was not connected with debility, "constituting the precise circumstances in which arsenical remedies have proved salutary," as Mr. Hill alleges; nor have I any reason to believe that it was a consequence of irregular action of the digestive organs, as Mr. Abernethy surmises. At the different accessions of the disease the bowels were frequently and freely purged with calomel and jalap, but I did not perceive any mitigation of symptoms from their use. The case of tumors in the tongue greatly resembles one published in the second volume of this Journal, which was cured by calomel and cicuta, continued for ten weeks, after the cicuta had failed by itself. Doubts, however, may arise in the minds of those who believe in the virtues of cicuta, whether the cure ought entirely to be ascribed to the mercury. No diminution of the tumors in Mrs. L.'s tongue took place till the ptyalism began. The success of the treatment of this case and that of tic douloureux by medicine, show the progress which is making in what may be called medical surgery; for, though we have a remedy at hand for tic douloureux, in cutting the affected nerve, and another in extirpation for tumors in the tongue, the irritability of which has been proved by the successful results of Dr. Inglis's cases to have been much over-rated, if a disease can be cured in the same time by medicine as by an operation, no comparison will be made between the two methods of treatment. The case of recovery from the rash use of laudanum, I am induced to publish, because I think it shows that we ought not to rest satisfied with fully evacuating the stomach after a vegetable poison has been swallowed. Though I saw the patient soon after the accident, and as expeditiously as possible emptied the stomach, the deleterious effects of the baneful drug still operated to such a degree, that, I verily believe, had the subsequent treatment not been adopted, she would have perished. A case of an excessive quantity of laudanum being swallowed is inserted by Dr. Marcet in the first volume of the Medico-Chirurgical Transactions. It would seem, from the little impression which such an enormous dose made upon the stomach or constitution, after remaining above six hours in the body, that the young man had been accustomed to use opium, or that the liquid drank was not prepared of the usual strength. The quantity swallowed by A. J. was much less than that by Dr. Marcet's patient, yet the symptoms were equally alarming in a less space of time, and even after full vomiting had been excited. The observations upon herpes of the prepuce, were suggested by the brief, but accurate remarks, of the reporter of the Public Dispensary, near Carey street, in the last number of this Journal.

Paisley, 15*th May*, 1811.

Case of Tic Douloureux cured by Arsenic.

1st October 1807.—I was called to J. M. a merchant-tailor, aged 57, of a healthy constitution. He complained of a violent intermitting pain in the inferior jaw, beneath the right commissure of the mouth; a similar pain was also frequently felt in the right cheek, and under the right ear. He had been more or less subject for several years to these pains; which began beneath the ear, and afterwards became equally acute in the lower jaw, from which he had a carious tooth extracted, under a persuasion that it was the cause of his suffering. The attacks did not return periodically, nor did the seasons appear to influence their recurrence; for they were as frequent and severe in summer as in the winter. The first time I saw the patient in this ailment was on the 18th July 1804, when he laboured under an inveterate relapse. I applied vesicatories both to the jaw and to the neck beneath the ear, and kept the ulcers discharging with issue ointment.

By this treatment, and purging with calomel and jalap, the fits were moderated, but soon returned with increased violence. On the 8th August a course of pills, composed of cicuta and corrosive sublimate was prescribed; and, to hasten the effects of the mercury, camphorated mercurial ointment was ordered to be rubbed into the jaw. Salivation was speedily effected, and kept up about eight weeks, without producing any amelioration of the patient's condition. The pains gradually decreased after the mercury was given over, and at last ceased altogether. Though slight twitches were often felt, after this no violent invasion took place till April 1806, when he again became exceedingly afflicted. The most intolerable pain which he endured in that attack was in the cheek, but the throes were now and then equally pungent in the other places. He said he was conscious that in his last illness he had obtained more relief from the blisters than from any other thing, and wished them to be repeated; this was done, but without interrupting the paroxysms. Leeches were next had recourse to, and the pains were mitigated, either by the loss of blood, or by the hot wet cloths which were applied to promote the bleeding. Finding so much relief from the first application of the leeches, he was induced frequently to repeat them in the same manner, when he was threatened with a paroxysm. At last, however, they lost their salutary influence, and he then tried the use of opium internally, and of sulphuric æther externally, to no purpose. The present attack began, without any known cause, about a week before I was consulted; when I arrived, my patient informed me his agony had been more insufferable than at any former period. The pains were most troublesome by day, seldom or never disturbing him by night. The excruciating paroxysms were excited by the slightest irritation; as by a breath of cold air blowing upon the face; by attempting to chew, or to speak abruptly, and sometimes even without provocation. At these times the pain suddenly darted into the lower jaw, and from that into the cheek, and beneath the ear. Each exacerbation consisted of a great number of short paroxysms, which lasted about half a minute; then remitted, returned immediately, again remitted, and so alternately, generally for the space of an hour. The exacerbations were not constant in degree or in duration. They sometimes caused violent contortions of the face, most ease being found by twisting the mouth to the left side, so as to stretch the muscles of the affected places, and by rubbing the skin towards his mouth with his fingers; relief was sometimes procured by pressing firmly over the infra-maxillary foramen. When the anguish was greatest, the face flushed, and tears gushed from the eyes, but no change in the appearance of the parts affected could be discovered. To describe the kind of pain which the miserable sufferer endured is impossible; he himself said at one time it was as if something was piercing or screwing into the flesh; at another as if it was tearing or twisting from the bone. When the paroxysms ceased he enjoyed perfect immunity of pain, till the morbid action was again excited. The general health was not impaired; the pulse was of the usual standard; the appetite was good; the bowels were regular.

Though my patient had at this time the most excruciating pain in the lower jaw, yet, as he was positive the first sensations of this disease were felt in the distribution of the portio dura of the right auditory nerve, and as sometimes very acute pain was endured where the superior maxillary nerve issued from the infra-orbitary foramen, I considered it a hopeless experiment to cut the inferior maxillary nerve. As I was entirely ignorant of the nature of this affection, I looked upon every thing that could be done for it as empirical; and as, in the present case, many of the most active remedies had been employed by myself and others, in preceding attacks, without permanent advantage, I thought myself justified in making a trial of arsenic, which had been recommended for tic douloureux by high authority. I therefore prescribed the following mixture:

℞ Sol. min. arsen.
Aq. pur. āā ℥i.

Of this the patient was desired to take fifteen drops in a basin of gruel, three times a-day, and to add one drop every day till sensible signs of the operation of the medicine should be observed. For a few days there was no alleviation; but as the dose was increased, the paroxysms became less frequent and more tolerable. On the 15th the pains were completely gone, but to prevent a relapse, I thought proper to persist in using the mixture. On the 17th violent pain seized the stomach; the pulse was strong, and the thirst was intense. Blood was abstracted; castor-oil was prescribed, and copious draughts of demulcent drinks were recommended. The medicine was also intermitted; but in a short time the patient was so much recovered, that it was resumed in small doses. It was continued a fortnight longer, without return of the original complaint, or of suffering from the remedy.

14th May 1811.—The painful affection of the face has never returned since the arsenical solution was desisted from, and the general health has been in every respect good.

Case of Tumors in the Tongue cured by Mercury.

7th February 1811.—Mrs L. aged 47, was admitted a patient of the Dispensary, for several tumors in the tongue. She had born a numerous family, and still menstruated regularly, but her general health had often suffered from abortions and profuse floodings. She had been subject to no local complaint till five years ago, when, in the last months of pregnancy, she was troubled with an eruption upon the nose, which was removed by rubbing it with what a quack called black mercury. After she was delivered, she was afflicted with an extensive inflammation in the throat, which was cured by frequently applying some liquid to the parts, by means of a sponge. About two years and a half ago, without any known cause, the tongue became very painful, and swelled to such a magnitude, that she could neither speak distinctly, nor swallow food, unless it were liquid. On this account, she rubbed the throat from ear to ear with an irritating ointment, which produced an eruption of pimples beneath the jaw. The swelling dissolved in the course of six weeks, and she then discovered several small knots in the substance of the tongue, round the edge of its anterior portion. She applied to her former adviser, but deriving no benefit from him, she consulted another itinerant, who gave her pills, composed, as she understood, of mercury. She took one three times a-day for several weeks, without her mouth becoming affected; at first she thought the tumors diminished; afterwards they remained stationary, and she desisted from the use of the pills. Nothing else was done till she put herself under my care, when she gave me the above history, and assured me the tumors were regularly increasing in size. They occupied almost the whole anterior portion of the tongue, and on the left side a large one extended far beyond where this organ is bound down to the jaw. They were so deeply seated in its substance, and so firmly adhered to it, that it was impossible to say whether they were nearest the superior or the inferior surface. The patient informed me small ulcers sometimes formed in different parts of the tumors and soon healed, but no cicatrices of such ulcers were observable. The tumors were irregular in their surface, having various depressions and elevations, and were as hard and unyielding as scirrhus. Though that on the left side was the largest, they were all equally painful, and troubled her much in manducation. She said, the pain which she felt was as if a spear were thrust from the tumors into the inferior jaw. The rest of the tongue was as soft and moist as usual, though the whole upper surface was covered with wide chaps; the sense of taste was natural.

My patient had suffered so much pain and inconvenience from these tumors, which she was convinced were rapidly enlarging, that she was alarmed about the consequences, and offered to submit to their extirpation. After reflecting, however, upon the history and present symptoms of the case, I could not reconcile myself to such a formidable operation as the removal of half of the tongue, which would have been requisite in order to eradicate the disease. She exhibited no signs of carcinomatous affection, or of suffering from the irritation of the tumors; her general health was better than it had been when she was younger; the sublingual and maxillary glands were not enlarged; and the spontaneous healing of the little ulcers, which occasionally formed on the surface of the tumors, indicated that they were not of a malignant character. From these reasons I thought some milder remedy than extirpation ought first to be tried, and with this view showed the case to my friend Mr. Kerr. He concurred in opinion with me, and the use of arsenic was talked of; but it was judged expedient to defer it till the full operation of mercury should be seen, especially as Mr. Kerr had formerly cured a case of the same kind in a child with this medicine, and as the patient was persuaded she had formerly been relieved by it. A blue pill was prescribed morning and evening, and afterwards three times a-day, but without effecting any reduction of the tumors. They moved the bowels, but neither salivated nor made the mouth sore. Mercurial friction into the thigh was therefore joined to the pills, to the extent of half a drachm of ointment twice a-day. In a short time the mouth became very sore; the mouth and face swelled enormously, and the ptyalism was profuse. The medicine was desisted from, and astringent gargles, with laxatives, destroyed the effects of the mercury. On the 19th March, no tumor or hardness could be detected in any part of the tongue; the pains were also entirely gone. As the deep chaps with the elevated edges continued, a few pills were repeated in April, but made no impression upon them. May 14, 1811.—The tongue is soft and free from pain; the fissures on its upper surface remain unchanged.

As it has been hinted to me that the above tumors might have been of a syphilitic nature, I think it proper to add, that the patient is of a respectable moral character, as is also her husband. She had been long accustomed to smoke tobacco, but never had any affection of the mouth or throat till the time mentioned.

Case of Recovery from an excessive Dose of Laudanum.

I was hurriedly called at five o'clock P. M. of the 28d April last, to visit A. S. an unmarried woman, aged 28, who had, in a fit of passion, determined upon self-destruction; and, for this purpose, had swallowed above an ounce of laudanum, which she purchased at two different shops to prevent detection. She soon became alarmed, and informed her friends of what she had done; so that I saw her within an hour after the liquid was taken. When I entered, she was sitting supported in bed, her eyes were wild and staring, the face was flushed, the skin hot, the pulse, when it could be reckoned, 126, and the voluntary muscles strongly convulsed. Her mind was in a state of great confusion, at one moment she was sensible of her crime, called for assistance, at another she resisted the means used to save her. The violent action of the muscles occasionally relapsed, and was alternated by slight subsultus. No intimation of the nature of the case being given by the person who came for me, I had no medicines provided; I therefore endeavoured to excite vomiting by tickling the fauces with some feathers, which she bit through; the mouth was then gagged, and the same attempt repeated without success. As I had often heard of vegetable acids being used to counteract the deleterious effects of laudanum, I poured down a quantity of vinegar. I soon after procured a solution of a scruple of tartar emetic, which the patient was made to swallow; but as it did not act in fifteen minutes, she got two drachms of white vitriol in solution, which operated powerfully. Whether the smell of the laudanum was concealed by that of the vinegar, or whether it had passed the stomach, I know not, but, in the liquids rejected, none was detected. The vomiting was encouraged by warm water for a considerable time. Pain being complained of in the abdomen, a large emollient glyster was administered with much difficulty, from a contraction of the sphincter, and only a few small scybala were voided; a second was exhibited with more ease, but came away with little fæculent matter; and a third which was attempted late at night, could not be retained from relaxation of the sphincter. At eight o'clock the increased action of the system abated, and the delirium was succeeded by languor and indifference. The thirst was intense, but the stomach was so irritable that it instantly rejected whatever was taken. A large vesicatory was applied to the region of the stomach, and the patient was ordered out of bed. At eleven o'clock the lethargy had increased so much, that it required the utmost exertions to keep her awake; the pulse was 55, the breathing laborious, the countenance dark and ghastly, the eyes sunk and often shut, the muscles flaccid, the extremities coldish; no inconvenience was felt from the blister. Though the thirst was still excessive, and she always called for drink when roused, the stupor was so great, that she sometimes fell asleep with the basin at her lips. Sinapisms were put round both legs, two scruples of calomel, mixed with sugar, were given; diluents, soured with lemon-juice, were recommended in small quantities at once, till the vomiting which recurred when large draughts were taken, should cease; a large dose of castor oil was directed to be then given. As the great relaxation of the muscles required a person at each shoulder to drag her from place to place, and even to support her in her seat, the attendants were permitted to use every expedient they could devise for preserving her in activity.

On visiting at eight o'clock next morning, I learned that the castor oil had not been given till five o'clock on account of the continuance of the retching; that the bowels were soon after freely emptied; that the fæces were at first firm, of a feculent odour, and of a brown colour, afterwards liquid; that the drowsy state at the same time gradually subsided, when she felt acutely from the sinapisms, which were accordingly removed, and were observed to have produced partial vesications. The plaster remained upon the region of the stomach, and caused much pain. The pulse was 70, soft and full; tongue clean; thirst great; no appetite; skin hot and dry; urine natural. She requested leave to sleep, which was granted, after the vesications were dressed with irritating ointment, to prevent her rest being too long. In the evening she complained of an acute pain in the lumbar region, and was in a profuse perspiration, which came on in the afternoon, after a sleep of two hours. She was ordered to support the back with a flannel bandage, and to avoid interrupting the perspiration.

25th.—She had slept soundly, and said she felt herself comfortable and free from pain in her back; the perspiration continued; the pulse was 70, rather feeble; the thirst was abated; the bowels were easy; no appetite. In the evening she was languid, her breathing was oppressed, her countenance was heavy, the perspiration was still profuse, and the thirst considerable. She had walked through the house, and her mind had been agitated by some reflections that were expressed respecting her conduct. She complained of debility and of pain in the abdomen. An ounce of castor oil was ordered, and a little warm brandy toddy occasionally.

26th.—She slept a short time during the night without refreshment. Pulse 80; tongue foul, with great thirst; no appetite; bowels freely evacuated by means of the oil; urine natural; pain of abdomen gone; much languor and lassitude. She complained of pain over the sternum on coughing. The ulcers on the legs were healed, that on the abdomen was ordered to be kept open. She was prohibited from rising out of bed.

27th.—She slept tolerably well, but in the morning felt weak, and looked stupid. Pulse slow and feeble; tongue foul; no appetite; bowels lax; urine natural; skin temperate. The brandy was discontinued, and the following mixture substituted,

℞ Æth. sulp.
Tinct. aromat.
Syr. simp. āā ℥ss.
Aq. pur. ℥iiss. m. cap. cochl. mag. 2da. q. h.

28th.—She was improved in strength by a good night's rest, and took some breakfast. Pulse 60; thirst gone; bowels costive; the pain at the sternum returned, so that a blister was ordered to be applied in the evening. The mixture which had been used irregularly, was desired to be continued.

15th May.—The pain of the chest was removed by the blister; the appetite improved, and she gradually increased in strength till the 2d inst. She then left town by my advice, and walked to a distance of eight miles, where she was not exposed to the causes which excited the rash action, and which still existed. By this removal, I understand, her mind, which was at the time in a state of imbecility, has recovered its former vigor.

Observations upon Herpes of the Prepuce.

Herpes of the prepuce is a disease trifling in itself, but of importance from the possibility of its being confounded with a much worse malady. That it is a disease of frequent occurrence I am persuaded, from the numerous cases I have met with, and that it has not attracted universal attention I am convinced, from various gentlemen having consulted me for this eruption, and having assured me they had formerly been put under mercury, from appearances precisely similar, in consequence of a belief that their symptoms had been venereal. I once knew a young gentleman undergo a severe course of mercury for what was called a cluster of obstinate small chancres, which only healed when the medicine was laid aside, by bathing the parts with a weak saturnine solution. I was lately consulted by a gentleman who had a cluster at the root of the prepuce, near its junction with the glans; he had a slight knowledge of medicine, and when I gave him my opinion that his complaint was not venereal, he was dissatisfied. He immediately, of his own accord, applied a quantity of calomel to the part affected, and rubbed mercurial ointment into the thigh. By this treatment the small vesicles burst, and afterwards united into one large ash-colored sloughy sore, exactly like a bad chancre. He was then certain he had an inveterate pox, and rubbed with all diligence to prevent constitutional contamination. He persisted in this practice for three weeks, when he rather cooled, as he saw his sore rather spread than contracted by the use of the calomel. He was now therefore induced to wash it off with milk and water, and to desist from the abuse of mercury. The ulcer soon healed by mild treatment, and by keeping the parts clean.

To prevent as far as I am able the recurrence of such maltreatment, from the imprudence of the patient, or the inattention of the practitioner, I hope I shall be excused for communicating briefly the result of my observation upon this subject.

My attention was first turned to herpes upon the prepuce, by an intimate friend showing me it, when he was conscious he had been engaged in no sexual intercourse, pure or impure. I have since frequently seen it in all its stages, and under the same circumstances, in the same person; for he has been liable to a return two or three times annually, for a series of years. He has of late become careless about it, and generally uses no means to remove it, because he suffers little pain, unless the vesicles break, and the urine irritates the sores, at which time he is led to bathe the parts with a drying lotion. In a case like this, the patient is exposed to no risk, for being sensible he has no occasion for a mercurial course, he will not submit to one; but a medical practitioner may have his judgment called in question, by hinting that the venereal disease has been contracted, when perhaps the crime which leads to it is abhorrent to the patient's dispositions.

Herpes upon the prepuce begins with a tingling burning sensation in a part of that covering; in a day or two a cluster of very small distinct vesicles is perceived, with a redness of a florid color in the intervals, and surrounding the whole. If proper treatment be pursued the disease is repelled; if nothing be done to cure or to irritate, the vesicles increase a little in size, and become opake in four or five days, when the inflammation increases, and is followed by a constant disagreeable itching; in two or three days more, the pustules, which have become confluent, are converted into a scab, which drops off in a few days. So far as my experience extends, it is never preceded or attended with constitutional symptoms, as herpes zoster is.

Till lately I thought, as all the cases of this disease which had come under my observation were situated within the prepuce, and happened only in those whose prepuce covered the glands, that it arose from the mucus there secreted becoming acrimonious, by inattention to cleanliness. I am now satisfied that this, if ever, is not always the cause; for at the time I received the last number of this Journal, my friend had a well-defined attack of it on the outside of the prepuce. The cluster was of an oval shape, and consisted of eight vesicles; which, as he did not interrupt their progress, became pustular, scabbed, and dropped off within a fortnight, leaving the cuticle beneath of a faded red color.

It is in the stage of vesicle that the patient is most apt to become alarmed, and by his conduct to change the character of this eruption so as to deceive his medical adviser. He feels an unpleasant sensation after an improper connection, he examines the part, and on detecting a number of blisters, he becomes uneasy; from modesty he is at first averse to disclose his situation; he looks frequently at the seat of the affection; he sometimes bathes it with the urine as it flows, and afterwards wipes it. By this treatment the tops of the vesicles are broken, and little sores are formed, which he shows to a practitioner; who, not aware that such a variety of herpes as this exists, joins in the patient's fears, and at once prescribes a course of mercury. This more readily happens if the patient has rashly used any corroding application. If, however, the diagnostic symptoms of herpes upon the prepuce and of chancres were adverted to, the patient's mind might be relieved from that anxiety which is common after every suspicious intercourse; for herpes does not resemble syphilis at its commencement so much as it imitates it when acrid substances have been employed to destroy its imaginary virulence. In herpes, the inflamed surface is of a florid color; the eruption is gregarious; the edges of the sores are smooth and regular, and their bottoms clean. In syphilis, the inflammation is of a copper colour; only one sore usually appears in one place; the edges of chancres are thick and ragged, and their bottoms sloughy. In herpes also the vesicles and subsequent sores are much smaller than in chancres.

The treatment of herpes upon the prepuce, which I have found most successful, either before or after the vesicles burst, is bathing the part frequently with a weak saturnine lotion, and defending it from the acrimony of the urine. If it be within or upon the edge of the prepuce, by gently touching it with simple cerate. If the disease be situated on the outside of the prepuce, I would advise the penis to be surrounded with a cloth kept constantly moist with the above solution. The patient should be prohibited from increasing the complaint by irregularity of conduct, and from fretting the parts by his anxious examinations.

Notes on Diabetes Mellitus, as it occurs in Ceylon.

BY THOMAS CHRISTIE, M. D.

[From the Edinburgh Medical and Surgical Journal for July, 1811.]

The enclosed notes on diabetes were written at Columbo in September 1809, a short time previous to my being compelled, from ill health, to leave Ceylon, and were intended for insertion in a work relating to some of the diseases of that island, the publication of which has been deferred.

If you should think them worthy a place in your Journal, you will oblige me by inserting them in the form in which they were originally written, at a time when I had an opportunity of ascertaining the actual state of most of the patients, by personal inspection.

Since my return to Europe, I have been made acquainted with cases of diabetes treated successfully by Dr. Watt and others, by venesection, and means apparently opposite to what I have been accustomed to employ, with such striking success, in Ceylon; but as I have had no personal experience of the mode of treatment recommended by Dr. Watt, I can only conclude with him, "that in medicine there are different ways of accomplishing the same end."

Cheltenham, 25th April, 1811.

Columbo, September, 1809.

Although I have not the honour of Dr. Rollo's acquaintance, I had intended to send him these, and some other cases of diabetes, as a confirmation of his train of reasoning, and of the successful practice he had the merit of introducing in this formerly fatal disease; but as the subject has been casually introduced here, and I have reason to believe that diabetes occurs much more frequently with the inhabitants of this island than in Europe, I think a succinct account of all the cases of diabetes I have met with at Columbo will be acceptable to my readers, and particularly to those gentlemen who may have occasion to practice in Ceylon.

The first case of this disease I treated at Columbo, was in a native of rank, Don Louis de Saram, second maha moo-deliar under this government. He applied to me in the month of June 1804, after having laboured under diabetes for twelve months, and being much reduced in flesh and strength. He had a voracious appetite, with constant thirst, and his urine was in great quantity, yielding a great proportion of saccharine extract. He had also a burning sensation in his stomach; uneasiness in the region of the kidneys; heat in the soles of the feet and palms of the hands; a dry skin; loss of his venereal powers, but no phymosis; his pulse and bowels natural.

He was immediately put upon animal regimen, which I have reason to believe he observed religiously, and ordered hepatized ammonia, lime-water, and pills with digitalis and opium. In a few days his urine was reduced to the natural standard, but lost its saccharine taste and peculiar smell. His other symptoms also more gradually disappeared, and he rapidly recovered his strength and flesh. In three months, having perfectly recovered his health, having increased in weight about 21lb., and being restored to all his functions, he was allowed to eat one meal of rice daily; and no relapse ensuing, he was soon afterwards permitted to return to his usual diet, which consists, in a great degree, of rice, fruit, and fish.

He has since occasionally applied to me in consequence of a slight increase of urine, which is easily removed, by resuming for a few days his animal diet, and taking a few pills, with a small proportion of digitalis and opium, which I have prescribed chiefly as a placebo, for the purpose of inducing him to persevere in his regimen. At the time of writing this note, September 1809, he enjoys excellent health, and although corpulent, is very active for a man of his age, which is now fifty-five.

My second patient, Don Juan Appoo, aged 40, a Cingalese, and physician by profession, had only had the disease seven months, but was still more reduced than my former patient. On the 12th of January 1805, when he first applied to me, his urine amounted to twelve pints, one pint of which yielded 2 oz. of saccharine extract, of the appearance and consistence of treacle. His emaciation was great, with a dry wrinkled skin, and sense of heat in the stomach, soles, and palms. His appetite various, with constant thirst, parched tongue, and costive bowels. Pulse quick and small. Phymosis, et coitus nullus. Weight 97lb.

He commenced the animal regimen on the 13th, and was ordered half a drachm of kali sulphuratum, and a pint of lime water daily. In this case the change in the quality of the urine was more gradual, and on the 25th it still yielded a little saccharine extract; when, in addition to the other medicines, he was ordered a grain of opium and digitalis, twice a-day. On the 5th February it only amounted to six pints, having a saline taste and smell, and yielding a little more animal extract than healthy urine. At this time also, all his symptoms had greatly diminished, and his appearance was much improved. On the 15th of March, all his symptoms having left him, and his weight being increased to 127 pounds, he was permitted to eat rice once a-day.

On the 16th of April, when he was desired to leave off medicine, I made the following report:—"My patient has persevered in the use of his pills and lime-water, and only eats of rice once a-day, when he consumes about one half measure, equal to one pound of the unboiled grain; at other times he eats animal food, of which he now uses more than two pounds daily. He has had no return of saccharine matter in his urine, which has a saline smell and taste, but yields rather more animal extract than healthy urine. It amounts to two or two and one-half quarts daily, and he thinks it generally increases somewhat every second day, when he bathes. He is now perfectly free from all complaint, has a healthy and robust appearance, and his skin soft, and flesh firm. His weight to-day is 136 pounds, being an increase of nine pounds since the 15th of March, and thirty-nine pounds since the 13th of January, when he commenced the animal regimen. This patient now returned to his usual diet, notwithstanding which his weight was found to have increased to 140 pounds on the 24th of June 1805; and he continued in perfect health till about the 20th of November 1806, when he was seized with febrile symptoms, succeeded by debility, sense of heat in his stomach, thirst, pain in his joints, and increased flow of urine, which on examination was found to contain saccharine matter. On the 4th of December, he applied to me for these symptoms, when his weight also was found to have decreased to 124 pounds.

"On resuming the animal diet, and the use of the kali sulphuratum, his symptoms almost immediately left him; and in the middle of January 1807, he was again discharged, free from all complaint, his weight having increased to 137 pounds."

At the time of writing this note, he enjoys good health, although he looks more emaciated than in 1807, and says he has occasional increase of urine, when obliged to live very much on vegetable diet, which the state of his circumstances sometimes requires. This man used formerly to practise chiefly amongst small-pox patients, of which he has not seen a case for the last three years, and is in consequence obliged to keep a school as a means of subsistence. It is a remarkable coincidence, which I hope I shall be excused for mentioning, that Don Juan, who in all appearance owes his life to one of the modern improvements in medicine, has lost his usual means of subsistence by a still more important one. It will be anticipated, that I allude to Dr. Jenner's great discovery of vaccination, which has been extended to upwards of 120,700 persons on this island; the inhabitants of which, previous to its diffusion, used to suffer dreadful ravages from small-pox, which they now only know by name.*

My third diabetic patient, Cornelius Gomez, aged 50, applied to me in 1805, but only persevered in the animal regimen for a few days; during which, however, his urine was diminished in quantity; when, getting tired of my prescriptions, he withdrew himself from my care, and went to a distance from Columbo. On inquiry, I learn that he is still living, and that he has occasionlly resumed the animal diet with benefit, but being irregular in pursuing any plan, the symptoms of his disease have increased, with extreme emaciation and debility, and his appetite having failed, his native physicians do not expect him to survive long.

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* At the time these observations were written, the small-pox had not existed in any part of Ceylon for upwards of eighteen months. In the October following, the contagion was imported by a boat from Quiloa to Jaffnapatnam, but only affected a few individuals there who had not been vaccinated. —24th of April, 1811.

A fourth patient, Don Johannes, aged thirty-eight, placed himself under my care, on the 12th of May 1805, when I made the following report in my notes: "At present, a thin spare man, but says, that until lately he was robust and lusty, and that he enjoyed good health till within these seven months, when his urine became increased in quantity, and for four months past he has had an unnatural appetite. He now makes above six quarts of urine daily, which yields a considerable quantity of saccharine matter, and he eats about three measures of rice (six pounds of dry grain) in a day, which is three times the quantity he was accustomed to consume when in health. He complaints of a sense of heat in his stomach, which is frequently distended with flatus, and also of a sensation of heat and creeping in his palms and soles. He likewise feels some uneasiness in the region of the kidneys. Belly regular; pulse eighty, and soft; tongue appears dry, and he complains of thirst. Skin is however soft, and he perspires as usual, on taking exercise. He says that two of his relations have died of this disease, and that he has taken a great deal of medicine from Cingalese physicians, without benefit.—Weight 106 pounds.

He was immediately put on the animal regimen, and ordered a solution of kali sulphuratum, with pills of opium and digitalis, and in three weeks his urine was of the natural apperance and quantity. On the 13th of June, his symptoms were nearly all removed, his appearance greatly improved, and his weight somewhat increased. On this day he returned to his usual residence at Bentolle, thirty-six miles distant, with strict injunctions to persevere in his animal regimen and pills.

On the 6th of August he returned to me, complaining of his urine having again increased in quantity, with a saccharine taste; and upon being questioned, he allowed, that soon after he went home, he commenced eating a little rice twice a-day.

He was again put on the animal diet, which speedily removed his symptoms; and, at the end of the month, he returned a second time to Bentolle free from complaint, and increased in weight 13lb. since he began the treatment. In passing Bentolle in the December following, this patient waited on me, with a present of fruit, when he assured me he continued well; but I have lately heard that he latterly took to dram-drinking, and is since dead. His relations assure me, that the disease which carried him off was dysentery, and that he had no return of sweet urine.

A fifth patient, a Portuguese priest, named Philippe Nera, aged 52, applied to me in July 1805, having been affected with slight symptoms of diabetes mellitus for about a year. As he was a man of information and strong mind, I explained to him my ideas of his case, or rather the reasoning of Dr. Rollo, and the beneficial effects we had experienced here from the animal regimen, which he promised to pursue. As his symptoms, however, were slight, he did not confine himself entirely to animal food, but ate an increased proportion of it, from which he experienced great benefit. He was recalled to Goa before his case had terminated, but his colleagues here informed me, that he now enjoys good health.

A sixth case occurred in Mrs. Laurenty, aged 40, the wife of a Dutch surgeon, who attended the family of my first patient, and took notes of his case when under my treatment. She had at this time been affected with diabetes for several years, from which she was greatly reduced, and made daily above six quarts of straw-coloured sweet urine, which readily fermented. Amongst other symptoms, she had an intolerable sense of heat and itching at the meatus urinarius, attended with sterility, since the commencement of her complaints. As soon as the good effect of the animal regimen was evident with Don Louis de Saram, she was put on a similar course, and in a few months perfectly recovered her health. She has since had two children, and assures me that at the present time she is free from all complaint.

A seventh case was treated conjunctly by Dr. High, staff surgeon at Columbo, and myself; and in this case we determined to trust entirely to animal diet, prescribing no medicine, but an emetic in the first instance, and afterwards castor oil, to keep his bowels regular. On the 12th of January 1806, when he first placed himself under our care, I find I made the following report.

"Don Simon, aged 48, was healthy and corpulent till within these eight months, when he was seized with cold shivering, and an attack of fever, followed by a great flow of urine, and other symptoms of diabetes. At present he is considerably emaciated, and complains of great debility, with an insufferable burning sensation in the region of the bladder, and in his palms and soles. He also complains of excessive thirst, and in the last twenty-four hours drank sixteen pints of water. His appetite was at first bad, but is now voracious, and he yesterday consumed 1½ measures, (3lb.) of dry grain of rice, besides a proportion of biscuit, fruit, fish, and beef. He yesterday made about twenty pints of straw-coloured fermentable urine, which when boiled, yielded about 5lb. of extract like treacle. His belly is very costive, and he occasionally passes ascarides; pulse 100, and feeble; tongue appears moist, but he has been chewing betel; he sleeps badly, which he attributes to the burning sensation and general pains; his skin is rather hot, but moist, and he sweats on taking exercise. He is said to be a sober man, and not addicted to the use of arrack or toddy,* but was accustomed to drink milk and country sugar before his illness, and since has indulged much in cocoa-nut water. For the last eight months he has had a most complete phymosis, and total incapacity for venery, though previous to that period he exercised all his functions with vigour. Weight 107lb."

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* Toddy is the liquor which distils from the fruit-stalk or spadix of the cocoa and other palms, the extremity of which is cut for that purpose, before the spatha or sheath containing the flower bursts. Earthen pots are fastened to receive the toddy, which is removed morning and evening. When first drawn, it is an innocent, not unpleasant beverage, resembling honey and water, with a peculiar smoky taste; but after being kept a few hours, it ferments and becomes an intoxicating liquor. In this state it is much drank by the soldiers, and many natives, and is also collected for the distillation of arrack, which is a principal article of export from Columbo and Galle. The cocoa-nut water, or milk, is the juice contained in the shell, and which, in a young, but full grown cocoa-nut, amounts to more than a pint, and is a pleasant cooling beverage, not unlike whey, but containing more saccharine matter. A Cingalese peasant, when he travels, generally carries two or three young cocoa-nuts with him, which often form the whole of his refreshment during the day. He drinks the milk, and afterwards eats the young kernel, which is in the state of a soft sweet pulp, adhering to the shell, from which he scrapes it with his hand, or makes use of part of the shell or husk as a spoon.

Soon after commencing the animal regimen, his urine was reduced to nearly the natural standard and appearance, and all his symptoms gradually, but regularly, gave way. On the 12th of February, Doctor High made the following report:

"Meat, 5lb.
"Drink, 6lb.
"Urine, 4½lb.

"Says his urine has entirely lost its sweetness, and the extract from lbij. does not exceed an ounce, and though in appearance like treacle, has a saltish taste; heat in the palms and soles less; numbness, of which he has complained for the last twelve days, is also less troublesome; sleeps better, and gains strength, having for the last fortnight walked above three miles daily; appetite and thirst more natural; bowels still costive; the uneasiness about the back and belly much better; pulse 98; tongue and mouth appear natural; phymosis has almost entirely left him; weight 115lb., so that he has gained 8lb. during the month."

The last regular report of him is on the 19th February; when he was still better and stronger than on the 12th, and towards the end of the month, he returned to his residence at Cultura; free from complaint.

This patient returned to Dr. High on the 18th of May 1807; when he said he had remained well till March 1807, in which month his symptoms again returned, but with less violence. On resuming the animal diet, they again left him, and did not return till April 1809, when they were a third time removed by the same plan, and at present he enjoys good health.

An eighth patient, Pedro Silva Bernardo Chitty, aged 40, placed himself under my care on the 25th of January 1808, when he made daily upwards of seven pints of urine, yielding about 1lb. of extract like treacle, and had all the other usual symptoms of diabetes. His weight was 114lb. In this case, I also trusted entirely to animal diet, prescribing only as a placebo, pills composed of magnesia. His urine soon assumed the natu-all appearance; and on the 28th of February he reported himself free from all complaint, although he was diminished in weight, being only 104lb., which was probably owing to his eating little in consequence of his dislike to animal regimen, since the commencement of which his bowels had also been remarkably open. On the 16th of March, having had no return of his symptoms, and a great dislike to the animal diet, he was allowed one meal of rice in the day. On the 8th of April he continued well, and was permitted to resume his usual diet of rice, fish, and curry, and only prohibited from fruit and fresh vegetables. In May, his health being perfectly good, and his weight 130lb. he was allowed to return to his usual mode of life; and on the 24th of June, when he left off attending me, I made the following note:

"Since last report he has lived as usual, eating chiefly fish, rice, and vegetables, which he does in considerable quantity, and with good appetite. He has not had the smallest return of his diabetic symptoms and appears robust, strong, and plethoric; his weight is now 137lb., being an increase of 23lb. since he began the animal regimen, and of 33lb. since the 28th of February."

At the time of writing this note, I sent for this patient, who assured me that he enjoyed tolerable health, although, from misfortunes in life, he had been obliged to live frequently on a spare vegetable diet, which increased the quantity of his urine, and occasioned emaciation, but of these symptoms he was always free when enabled to eat a meal or two of animal food daily.

While writing this note, my highly respected friend Dr. High, who, as well as many of the other medical gentlemen at Columbo, has seen most of these patients, brought me a ninth case of diabetes, of which, in his presence, I made the following report.

"Ranma Poelly, a Chitty, aged 36. 11th September, 1809.—Applied to Dr. High on the 3d of September for diabetes mellitus, which he had had for twelve months, and which had occasioned great emaciation and debility. He at that time drank nearly nine pints daily, and made about thirteen pints of straw-coloured urine, which fermented, and when boiled yielded about 14oz. of saccharine extract like treacle. He had also considerable thirst, and a voracious appetite, pain in the kidneys, and some degree of phymosis. Belly costive. Weight on the 3d, 124¼lb. He has since the 3d restricted himself to animal diet, with the exception of 4oz. of bread daily, and he feels himself much stronger, and is improved in appearance. Urine about 5¼ pints, without any sweet taste, and yields comparatively very little extract, although it has not the strong ammoniacal smell of healthy urine. Thirst and pain in the kidneys gone; appetite natural; bowels more open; weight on the 9th was 126lb."

I have seen two more cases of diabetes at Columbo; the one a Gentoo named Vera Pattren, aged 50, applied to me in 1806, when he was much reduced by the disease, which had, however, lasted only four months. On being informed that medicines would be of no use, unless he could conform to strict animal regimen, he declined placing himself under my care, alleging as an excuse, the injunctions of his religion; and the native doctor who attended him, informs me, that he died of the disease a month afterwards.

The last patient, named Johannes de Silva, is now ill at Columbo, and has once applied to me, but cannot summon resolution to submit to the animal regimen, and at present is taking Cingalese medicines; but says he will place himself under my care if he does not soon get better. He is sixty years of age, and very much reduced in strength and appearance, so that I have no great expectations of his ever enjoying good health, even should he adopt the animal diet.

The result of these cases so perfectly agrees with the observations and reasoning on diabetes mellitus contained in the excellent work of Dr. Rollo, that it would be superfluous to add any remarks whatever to the simple statement of them, did it not appear necessary to mention some particulars as to the mode of living and habits of the people of this place, which may perhaps tend to account for the greater frequency of the complaint, and its more certainly and readily giving way to animal regimen, than could be expected in Europe.

In addition to the occurrence of so many cases of diabetes in my own practice, which with the Cingalese is very limited, I have the testimony of several native doctors, as to its being by no means an unfrequent disease with the inhabitants of this part of Ceylon; and from the circumstance, of the natives o Hindostan living chiefly on rice and vegetables, some of the casts being entirely interdicted the use of animal food, I had conceived, that it must be equally frequent on the continent of India; but from my friend Dr. William Hunter of Calcutta, who is well acquainted with the diseases, as well as with the literature and customs of the natives of Bengal, I learn, that although the diabetes mellitus is described in the books of both Hindoos and Musselmans, under a similar name as in Ceylon, he has never met with an instance of it at Calcutta, which convinces me that it is by no means so frequent in Bengal as in Ceylon, and I think a satisfactory reason may be found for this in the different articles which compose a great part of the food of the Cingalese.

The injunctions of the religious of Boudha, are by no means so severe as of that of Bramah, in the prohibition of animal food, since even the Boudha priests may eat of it, provided it has not been killed by them, or by their order; but this interdiction of not depriving any animal of life is applicable to all the Boudhists of high cast, and in a certain degree the prejudice extends to the lower orders, and even to some of those who profess Christianity; besides which, meat, particularly mutton, is comparatively very scarce and dear at Columbo.

The bulk of the people, therefore, in the vicinity of Columbo, consume, I believe, less animal food than in most parts of India, and certainly far less grain, which, from the nature of the soil, and the state of cultivation round Columbo, is not produced in nearly sufficient quantity for the subsistence of the people. A considerable quantity of rice is imported from Bengal, and other parts of India, but the poorer orders have seldom the means of procuring much rice, and live a great deal upon yams and sweet potatoes, jack-fruit, plantains, or bananas, and particularly cocoa-nuts, which form a great part of the subsistence of the people in the corles, or districts, dependant on Columbo. These all furnish sugar ready formed, and in greater abundance than rice, besides which they use a great deal of country sugar or jaggery, prepared from the toddy of the rittiel palm (caryota urens), which is very cheap, and forms an article of export from this place.

As a strong corroboration of my opinion, that it is owing to the immoderate use of these articles that the Cingalese are so subject to diabetes, it ought to be mentioned, that during nine years, in which I have received the hospital returns of all the European and native troops on Ceylon, not a single case of diabetes had occurred amongst them, although the number of men has in general been about 7000, and that of sick has been on an average upwards of 500. The Europeans have beef served out to them daily, and the natives receive a liberal allowance of rice, on which they chiefly live.

If it should be allowed, that the natives of Ceylon are more exposed to attacks of diabetes in consequence of their using little animal food, and subsisting chiefly on articles furnishing a great deal of sugar, it will readily be understood, on the general principle, that the system is acted on most powerfully by those causes to which it is least accustomed; that the abstraction of all articles of diet which contain sugar, or from which it is likely to be formed, with the substitution of an animal regimen, will be more likely to produce an immediate change on the state of the urine and digestive powers, than with Europeans who have been accustomed to a more considerable portion of animal food in their ordinary diet.

Few of the people of Ceylon, who are plain and simple in their general mode of life, are ever disposed to indulge much in luxury of the table; so that unless it interferes with their religious principles, or with the state of their circumstances, a change of diet is with them a subject of little consideration; and on that account I have found less difficulty in prevailing on them to comply strictly with my injunctions; which in general went to the entire prohibition of every thing but animal food of different kinds, dressed with ghee, or clarified butter, and water, with or without the addition of a little brandy.

It ought to be remarked, that in all my patients there was an increased appetite. Had they been in that advanced stage of diabetes in which the appetite fails, it might have been dangerous to abstract so suddenly all their accustomed articles of food, and advisable only to adopt the animal regimen gradually or partially.

In some of the cases it is noted, that the quantity of urine was increased on the days the patient bathed, and in others, that the quantity of urine exceeded that of liquid drank; from which it might be conceived, that I was of opinion that absorption of fluid takes place from the skin in this disease; and it is therefore necessary to remark, that I have had no distinct proof of this, for the quantity of water contained in the articles of food, particularly boiled rice, was much more than would account for the excess in the quantity of urine above that of liquid drank, and the variation of quantity on the days of bathing was so slight, that in all probability it might be owing to other causes.

The partiality of the Indians to frequent ablutions is well known, and I generally permitted them to bathe as usual during the whole course of treatment, by which indulgence I more readily procured their observance of my other directions; and by keeping the skin soft and clean, I rather thought it promoted the cure. It was performed, as is usual with the natives, by standing up to the breast in a pool of fresh water, and pouring it repeatedly over the head; but as the water is generally above the temperature of 80 of Fahrenheit, it cannot be considered in the same light as the cold bath or affusion in Europe.

It is probably owing to the frequent use of the bath amongst the natives, that I have less frequently met with dry wrinkled skin, or phymosis, than I had been led to expect from the perusal of the cases collected by Doctor Rollo.*

I have been at some pains to learn what is said in the Cingalese books† of the diabetes mellitus, or *madu mehé* (honey urine) as it is there called, and, with the assistance of my friend and relation, Mr. William Tolfrey, who is well acquainted with the language, I procured the following translation, or rather abridgment, from the *Yoga Ratnakêre*, or collection of valuable prescriptions, a book written in Cingalese verse, and said to be translated from the Sanscrit by Monara Gamuwa Unnanse, who lived in the 16th year of Bowenaka Bahu, king of Ceylon, who reigned upwards of 300 years ago, and previous to the settlement of the Portuguese in the island.

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* The warm and uniform temperature at Columbo, where Fahrenheit's thermometer rarely sinks below 70, or rises above 86, may have contributed essentially to the favourable termination of the cases of diabetes treated there. Might not an artificial temperature, which has of late been successfully used in Great Britain in pulmonary complaints, be also employed with advantage in diabetes? 24th April, 1811.

† My attention was first directed to those on the subject of diabetes by my second patient Don Juan, who said he was well acquainted with his own disease, which was described in the Cingalese books, under the name of madu mehé, as an incurable disorder, and that his own experience confirmed this opinion; for that, although he had often seen the disease, he had never known any person recover from it, except Don Louis de Saram, my first patient.

As many of the words are derived from the Sanscrit and Pali, the learned language of this island, Mr. Tolfrey cannot be answerable for the correctness of it in every respect; but I shall subjoin it here, as a curious specimen of what kind of information may be procured from the Cingalese medical books, which in many respects will, I conceive, be thought to resemble the dogmas and subtilities of the Galenic school.

The *pra mehé*, or diseased flow of urine, is divided into twenty species, of which ten proceed from phlegm, and are easily cured; six from bile, which may also be cured with care; and four from wind, which last are incurable.

The ten species proceeding from phlegm are,

1st, Udaka mehé.—*Udaka* in Sanscrit and Pali signifies water, and the symptoms are a flow of very clear urine, cold, without smell, like water, and discharged without pain, with a little slime.

2d, Ikshu mehé.—*Ikshu* Sanscrit and *utchu* Pali, means the juice of the sugar cane, and the symptoms are slimy cold urine, like that juice.

3d, Sura mehé.—*Sura* in Sanscrit and Pali signifies toddy,* and in this the urine resembles toddy, and on being kept deposits a similar sediment.

4th, Sandra mehé.—*Sandra* in Sanscrit signifies thickness, and in it the urine, after being allowed to stand a night, is thick.

5th, Pishta mehé.—*Pishta* Sanscrit, *pitha* Pali, signifies flour, and in this species the urine, after standing a night, deposits a sediment white as flour, and of very little weight. Another symptom is, that when the urine is passed the hair of the body stands on end from pain.

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* For an explanation of the word toddy, see note, p. 72. The urine of diabetic patients in the climate of Ceylon never fails to ferment on being kept a night; and in this state it bears a striking resemblance to toddy, which has undergone a slight degree of fermentation.

6th, Sukra mehé.—*Sukra* Sanscrit, *suka* Pali, signifies semen, and in this the urine is discharged with a mixture of semen, which it resembles in colour.

7th, Saikta mehé.—*Saikta* Sanscrit, *sikata* Pali, signifies sand, and in this species small round particles of phlegm are discharged with the urine, resembling sand.

8th, Sita mehé.—*Sita* in Sanscrit, Pali, and Cingalese, signifies cold, and the symptoms of this species are extremely cold and very sweet urine.

9th, Samairiam mehé.—*Samairiam* in Sanscrit, signifies drop by drop, and the symptom is, the urine being passed drop by drop.

10th, Alala mehé.—*Alala* Sanscrit, *lala* Pali, signifies saliva, and the symptoms are urine mixed with particles of phlegm, in the shape of small threads, and slimy like saliva.

The six species proceeding from bile are,

1st, Manjesta mehé.—*Manjesta* Sanscrit, *manjutta* Pali, is the name of a red seed, and the urine in this species is of a reddish colour, and has a fishy smell.

2d, Rakta mehé.—*Rackta* Sanscrit, *ratha* Pali, signifies blood; and the urine in this species is of the colour of blood, feels hot, tastes salt, and has a fishy smell.

3d, Nila mehé.—*Nila* in Sanscrit and Pali, signifies blue, and in this species the urine is of a bluish colour.

4th, Hariddra mehé.—*Hariddry* Sanscrit, *halliddy* Pali, signifies yellow, and in this species the urine is of a yellow colour, of a sharp taste, and discharged with heat.

5th, Rala mehé.—*Rala* in Sanscrit and Pali signifies black, and the urine in this species is of a sooty colour.

6th, Kshara mehé.—*Kshara* Sanscrit, *kara* Pali, signifies saltish, and in this species the urine is to the smell, taste, and touch, like sea-water.

The four species proceeding from wind are,

1st, Wasa mehé.—*Wasa* in Sancrit and Pali signifies fat, and in this species the urine is discharged frequently, either mixed with fat, or entirely composed of an unctuous substance.

2d, Mudja mehé.—*Mudja* Sanscrit, *minja* Pali, signifies marrow, and in this species the urine is discharged frequently, and resembles marrow, or is mixed with that substance.

3d, Hasta mehé.—*Hasta* Sanscrit, *Hutty* Pali, signifies elephant. The urine in this species is discharged frequently, and with difficulty, resembling the semen of a ruttish elephant, or the liquor of the joints.

4th, Madu mehé.—*Madu* in Sanscrit and Pali, signifies honey, and in this last species the urine is of the color and taste of honey.

In the *Bayajja Manjussy*, or Medicine Chest, another work more lately translated from the Pali, the same account is given of the different species of *mehé;* and it is said they are occasioned, amongst other causes, by whatever produces much fat urine or phlegm, as indolence, eating cold and sweet things, and food of a watery nature. The more immediate causes of the *madu mehé*, are either decrease of the substance of the body, and excess of wind, or the wind's being obstructed and mixed with the blood; on which account it is incurable. The distinguishing symptoms of the four species of *mehé* proceeding from wind, are flatulence and eructation, tightness of the chest, tremor, pains, restlessness, emaciation, and difficulty of breathing.

The only remedy recommended for *madu mehé*, is pills composed of seventeen ingredients, amongst which are the following: Sulphur, nitre, borax, sal ammoniac, yellow arsenic, cinnabar, capsicum, black pepper, and several other vegetables with which I am unacquainted.

Although the above division and distinctions of the *pra mehé*, which seems to include all the diseases of the urine, is arbitrary, and often fanciful; yet it is a curious circumstance, that the Indian physicians should have described so distinctly the sweetness of the urine in *madu mehé*, which had escaped the observation of both the ancient and modern physicians of Europe till the time of Willis.

Analysis of the Cactus Coccinillifer.

BY JOHN BOSTOCK, M. D. LIVERPOOL.

[From the Edinburgh Medical and Surgical Journal for July, 1811.]

In one of the late numbers of your Journal,* you give an account of some observations that have been made in the East Indies on the cactus coccinillifer, both as an article of nutrition, and especially as possessing antiscorbutic properties. You conclude by expressing a wish that some one would endeavour to ascertain whether it contains any citric acid, and it was principally with this intention that the following experiments were performed. A portion of the leaf of the cactus, which weighed 100 grs. was cut into small pieces, and was then strongly agitated in a bottle with ℥i of water. It was then squeezed through a linen strainer, and nearly one ounce of a mucilage was procured, which was of about the consistence of albumen ovi, and was so tenacious, that is was scarcely possible to divide it into separate portions. Another ounce of water was then added to it, and it was again strongly agitated in a bottle, by which means it was reduced to a consistence similar to that of the serum of the blood, and in this state was made the subject of experiment. The residue of the leaf, that had not passed through the strainer, weighed 73 grs. but after being for some time exposed to a gentle heat, it was reduced to a little more than 5 grs. The mucilage was nearly transparent and colourless, and without any peculiar taste or smell. It remained for a considerable time exposed to the atmosphere, without undergoing any alteration; but gradually it deposited a small quantity of a flocculent matter, and acquired a slightly putrid odour. Although the consistence of the mucilage appeared to be very nearly the same with that which is produced by dissolving one part of gum Arabic in ten parts of water, yet it was found, upon evaporation, to contain not more than 1-100th of its weight of solid contents. There was an obvious difference between the consistence of the cactus mucilage and that from gum Arabic; a difference which, I conceive, will be comprehended, by stating that the latter is more glutinous, and the former more tenacious. In this respect the mucilage of the cactus approaches to that of linseed. The mucilage, although it appears to be indefinitely soluble in water, is not easily incorporated with it; but by strong agitation in a bottle a complete union may be formed. By the test of litmus, the mucilage was found to be very slightly acid. The quantity of acid was so small, that 250 grs. had its acid apparently neutralised by one drop of a solution of potash, formed by dissolving one part of the kali purum of the pharmacopœia in four parts of water; the addition of three drops caused the mucilage to be decidedly alkaline. This acid could not be the oxalic, because the oxalate of ammoniac threw down a minute quantity of a powdery precipitate, proving that the fluid contained lime. In order to ascertain whether this lime was united to an excess of citric acid, lime-water was gradually added to convert the supercitrate into the citrate of lime, but no precipitate was produced. To try whether it was the tartaric acid which existed in the mucilage, potash was added very gradually, but no precipitate was formed. I do not, indeed, conceive that these experiments prove the absolute non-existence of either the citric or tartaric acids, because the methods employed for detecting them do not appear applicable to discover them when in every minute quantity. This, indeed, appeared to be the fact; for when very dilute solutions of the citric and tartaric acids were formed, neither the lime-water in the one case, nor the potash in the other threw down any precipitates. I conceive, however, that we may be warranted in concluding, that the power of the cactus coccinillifer does not depend upon any acid which it contains. I afterwards examined the action of some of the re-agents, which I had formerly found to produce peculiar effects upon different vegetable mucilages. Although lime-water did not throw down any of that powdery precipitate which indicated the formation of the citrate of lime, yet I observed, that after lime-water had been for some time in contact with the mucilage, the sides of the glass were coated with what appeared to be small particles of gummy matter; and I found the same effect to be produced in a greater degree by barytes water. It would appear to arise from a weak action between the mucilage and the earth, by which a partial separation is produced of the vegetable matter from the water that holds it in solution. When alcohol was added to a mucilage of about the consistence of serum, that is, when it contained about 1-200th of its weight of solid matter, the two fluids were incorporated by agitation in a bottle, without any visible change being effected; but when the mucilage contained 1-100th of its weight of solid matter, the alcohol separated it in the form of a spongy mass, without rendering the fluid in any degree opaque; in this respect agreeing with the mucilage of linseed, and differing from that of gum. The oxymuriate of tin, and the nitrate of silver, also formed a spongy precipitate, while the acetate of lead produced a copious dense precipitate. Silicated potash, the oxysulphate of iron, and the nitrate of mercury had no effect on the mucilage.

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* No. 20. Vol. V. p. 481.

These experiments show, that the substance which enters so largely into the composition of the cactus coccinillifer is, in most respects, similar to the mucilage of linseed, and that, if the distinction which I formerly* pointed out between gums and mucilages is to be considered as having any foundation, the substance in question must be placed in the latter class.

The effects of the re-agents differ so much in almost all the varieties of gums and mucilages, that we are led to inquire, whether this depends upon a peculiar action which is exerted between the gum itself and the re-agent, or whether it may not depend upon the extraneous bodies which are known to exist in gums? Gum Arabic, for instance, contains a considerable quantity of lime, and possesses the singular property of precipitating silicated potash; does the effect in this case depend upon the gum itself, or upon the lime which is combined with it? To ascertain this point I added oxalic acid to the mucilage of gum Arabic, until all the lime was separated in the form of the oxalate. It was then diluted with water, so as to permit the precipitate to subside, and was afterwards evaporated to its former consistence. Oxalic acid now produced no effect upon it, and yet it still precipitated silicated potash. We may, therefore, conclude, that there is a specific action exercised between gum Arabic and silex. There can be no doubt that when the acetate of lead is added to gum, an union takes place between the gum and the lead, because the water of solution is obviously deprived of its viscidity. I endeavoured to ascertain the proportion in which gum Arabic and lead unite: In one experiment 50 parts of gum united to 35 of lead; and in a second, 30 parts of gum to 20 parts of lead; but there is always some uncertainty in operating upon vegetable substances, from the difficulty there is in separating the precipitates from the fluid, and reducing them in the same degree of dryness. Besides, I am disposed to conceive, that in this, as in many analogous cases, the nature of the compound is influenced by the circumstances under which the experiment is performed.

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* Nicholson's Journal, 18, 38.

Knot'shole Bank, near Liverpool,
April 27th, 1811.

SELECTED REVIEWS.

Some Observations upon Diseases, chiefly as they occur in Sicily. By William Irvine, M. D. F. R. S. Ed. of the Royal College of Physicians of London, and Physician to his Majesty's Forces. 8vo. pp. 120. London, 1810.

[From the Edinburgh Medical and Surgical Journal for July, 1811.]

Those medical writings, which present us with a view of diseases, under various circumstances of climate and different modes of life, delineated upon the spot by a diligent and faithful observer, afford us the most agreeable exercise of our critical function. They not only interest us by the novelty of the facts which they communicate, but they serve as a sort of touchstones, by which we may ascertain the value of our theories and practical precepts, as they result from the limited views to which our own local situation necessarily confines us. The sound sense and unaffected perspicuity of language, which are manifest on opening this little volume, led us to anticipate much satisfaction from Dr. Irvine's observations; and the perusal of the work, which, we think, in proportion to its extent, may not shrink from a comparison with that of his learned predecessor in the same climate, Dr. Cleghorn, fully justified our anticipations. The only imperfection in the value of these observations which can suggest itself, arises from a doubt, which is left upon the mind of the reader, relative to the length of time during which they were collected. They are detailed in a terse and aphoristic style, as if they were the result of a long and cautious induction, which had comprehended so large a view of the influence of the seasons, and of the physical, moral, and political circumstances of the people, as might serve for the ground of an ample generalization. And, indeed, there is so much consistency in the observations in general, not only among themselves, but with the results of modern experience, under the direction of the ablest inquirers elsewhere, that we trust they are the inferences from a most ample research. All that we learn from the author, upon this point, is contained in a sentence or two in the preface; where he states, that the number of patients that have been under his treatment "has been very large;" and that "in the course of two months only, September and October 1808, there passed under his superintendence 163 patients, of whom 55 had continued fever, 50 intermittents, and 29 dysentery, for the greater part important and formidable cases."—"Few opportunities," he adds, "occur where, during an equal period, more ample or satisfactory experience could be presented." The patients were lodged in a building, admirably adapted to the purposes of an hospital, which was formerly the College of Jesuits at Messina; and the management of them was left to the uncontrolled direction of the physician in every respect.

In the first chapter, Dr. Irvine treats of "the climate of Sicily," and the other circumstances which constitute what has been called the *medical topography* of the island. The chief peculiarity of this climate, which is included between 36° and 38° of north latitude, is its heat; the whole summer being oppressively hot, the thermometer in the months of July and August standing on an average at 86° in the day; and not much lower in the night. Nor is there often much actual cold in the winter; for the thermometer seldom sinks below 50°, between the months of November and May, but commonly ranges between that degree and 65° or 70°. Nevertheless "the vicissitudes of heat," Dr. Irvine observes, "are very great; and I have often seen an alteration of 20° in the temperature within twenty-four hours: of consequence local inflammations are common during the winter season, and phthisis pulmonalis is frequently fatal." (p. 2.) The comparative healthiness of the seasons on the shores of the Mediterranean still continues the same as in the times of Hippocrates, Celsus, and Galen. "The unhealthy season in Sicily occurs during the summer and autumn: by far the greatest number of deaths happen in these periods; the other seasons of the year are comparatively free from disease."* (p. 7.) The heat itself appears to give rise to much disease; but its combination with moisture is considerably more pernicious. From the beginning of May to the end of August little or no rain falls: in September the rains begin. "In June and July fevers are frequent, and have much of the inflammatory type. In August and September they are still more common, and begin to be accompanied with more debility: from that time dysenteries increase in number; but after the end of October few new cases comparatively occur."—"Light rains in autumn," the author observes, "are commonly observed to be unhealthy, and nothing is so serviceable for the prevention of disease as heavy rains, occurring about the middle of September, so as to extinguish the heat of the soil, and put an end to the formation of miasmata." The effect of rains, falling early in the autumn, while the ground is still hot, in exciting miasmata and disease, is well known to the inhabitants. "I remember a muleteer," Dr. Irvine says, "passing over the hills near Ibesso, in the middle of August, during a heavy rain, who remarked, that these rains falling on the heated ground would cause a great stink (puzsa,) and that many would be poisoned." (p. 6.)

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* The reader will recollect the statement given by Celsus from Hippocrates: "Saluberrimum ver est; proxime deinde ab hoc, hiems; periculosior æstas; autumnus longe periculosissimus." (Lib. II. cap. 1.) This maxim, that the summer and autumn were the most sickly seasons, is not only verified, Sir

Sicily is a very mountainous country; and the chief sources of the "malaria," or bad air, are the water courses between the hills, which are dry in the summer. "Many of these are extremely unhealthy in the latter part of summer and in autumn." The north wind is cold in Sicily; but the qualities of the *sirocco*, or south-east wind, which is hot and damp, have been greatly exaggerated. Dr. Irvine never observed any influence exerted by it on diseases. On the whole, he is of opinion, "that to those who can and are disposed to take proper precautions for avoiding the warmth of the mid day in summer, and the chillness and damps of winter, and the frequent and enormous vicissitudes

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J. Pringle remarks, in the warmer climates, but also in camps, where men are much exposed to heat and moisture, (and, it should be added, to animal and vegetable effluvia) the great causes of putrid and contagious diseases. (On Dis. of the Army, P. II. chap. 1.) The absolute reverse of this is now true, in our own climate, since the draining of land, and the cleanliness, good pavement, ventilation, &c. in towns have been generally attended to. (See Heberden on the Increase and Decrease of Diseases.—Ann. Med. Register, Vol. I. for 1808.)

of the temperature, Sicily will prove a healthy residence. To avoid the heats, it is only necessary to keep within doors; but to avoid the cold and vicissitudes, well finished houses, and the occasional aid of stoves, are requisite." (p. 7.)

In chapter second, Dr. Irvine briefly states, that the continued fevers of Sicily vary in their symptoms with the variations of the seasons; and that, therefore, although he considers them as essentially of the same nature, he will describe them under the three denominations of summer, autumnal, and winter fevers. The first assume a very inflammatory type, run often a short course, but not unfrequently the contrary, and bear plentiful evacuations with advantage. The second are more seldom rapid in their course, are speedily marked by great debility, which is not so certainly cured by general evacuations, and which is frequently accompanied with universal yellowness of the skin. In the cool weather, that is, from November to May, fevers are less common, are more protracted in their duration, and are accompanied with less sudden and violent depression of the powers of life; in a word, "they very much resemble the synochus of England." These three forms of fever are the subjects of the three succeeding chapters, which occupy about half the volume.

The *summer fevers*, described in chapter third, although occurring at all times during the hot months, made their attacks especially after exposure to heat and exercise in the sun, sometimes suddenly, sometimes after previous indisposition. Soldiers on duty, as centinels, have been so powerfully and rapidly affected, as first to drop their arms, and immediately afterwards to fall down themselves: and a man, sitting in the sun in perfect health, has been seized in a few minutes with vomiting, and exhibited every symptom of fever. The ordinary symptoms of acute synocha characterised the attack.

"The head always ached, frequently violently; the eyes were often suffused as early as the second or third day; the countenance was red; and the arteries of the head beat strongly. Before the eyes became red, and in cases where that symptom did not occur, they appeared watery and preternaturally clear. In some cases delirium came on very early. The bowels were costive, but not in general difficult to move. Sleep and appetite were gone. The disease had, not unfrequently, no tendency to a rapid crisis. I lost one patient on the 34th day, and many lingered to the 14th, 18th, and 20th. Occasionally, however, things ran a different course, and a fatal termination occurred on the 3d, 4th, or 5th day from the attack. One circumstance is rather surprising, that in some of the protracted cases, though by no means in all of them, the symptoms continued the whole time extremely violent, and no sinking could be remarked till a day or two before death." p. 12.

We think the following observations sufficiently important to warrant us in transcribing them at length, without any apology. It cannot have escaped the notice of practitioners, conversant with the appearances of continued fever, how often the occurrence of one untoward symptom, which might elude the observance of a common eye, will imply the presence of some morbid action of importance, at a time when the general symptoms are favourable: this will be various, according to the nature of the organ in which the morbid action takes place; and is well exemplified, in regard to the head, in the following paragraph.

"In other instances," says Dr. Irvine, continuing the observations just quoted, "the urgency of the disorder seemed by degrees to abate. The patient lay in bed weak and helpless. Often the greater part of the phenomena of the disease were of a favourable omen. One man whom I visited might be said to be right in every respect. His pulse, skin, and bowels, were natural. He ate heartily, and asserted that he was well. But there might be remarked a rapidity of speech, something odd in his manner, which in fevers of this country is a most fatal symptom. He became comatose the same evening, and died the next morning. Numerous instances of an analogous nature, though with some varieties in particular circumstances, have occurred to my observation. In fact, in many cases, but by no means in all, there might be distinguished, with more or less exactness, *three stages* of the disease. The first was the stage of fever, which lasted for an indefinite number of days, and gradually verged into the second, or stage of interval or remission, in which the patient often thought himself, and sometimes appeared to others, free from danger, if not from disease. This stage lasted also for an uncertain time, yet not in general for more than a few days; I have, however, seen it continue for a much longer period. During its existence, it was never difficult for an experienced practitioner to detect some circumstance incompatible with health, above all, in the look of the eye, the management of the voice, or the appearance of the tongue. The third stage may be called the stage of coma. It came on very suddenly, and quickly terminated in death. I have never known, or heard of an instance of recovery from even the incipient symptoms of this stage. So remarkable were these three stages, though not always referred to their true causes, that patients were often considered as dying of apoplexy, who in reality fell victims to fevers. The intermediate occurrence of what I have called the interval, drew off the attention from the connection between the early fever and the concluding coma, which must also be allowed in its symptoms to bear a perfect analogy to complete apoplexy.

"There were many cases, by far the majority indeed, in which the stage of interval did not appear: in place of it there was sometimes only an apparent amelioration of the disease. The patient seemed in a mending way; to be wearing out of the fever, as it is said, and to be free from any considerable danger. But all of a sudden, without any obvious cause, he became worse, and speedily fell into a coma, that in a few hours terminated in death." p. 13. *et seq.*

After stating, that the stage of interval was, in a very few instances, not followed by that of coma; but, instead of lasting for some days only, it was protracted for several weeks, and at last terminated favourably; the author says,—

"It is worthy of remark, that an affection apparently, as I hope to show, of the head, may have the power of inducing a long train of lingering, and almost chronic symptoms, without the presence of any very violent action; and it may perhaps deserve inquiry, how far these nervous and protracted fevers of our own country may not owe their duration and their obstinacy to something similar." p. 15.

Dr. Irvine admits, however, that the early appearances of the fevers of Britain just mentioned, have little resemblance to those of the summer fevers of Sicily; which last, he observes, resist the ordinary degree of treatment in our island, in a surprising degree. But although this may be true, we are disposed to believe, that the principle is applicable, to a proportionate extent, to many of the fevers of this country, which, under the supposition of nervous debility, have been erroneously treated upon the tonic and stimulant plan. This plan, Dr. Irvine is satisfied, is wholly inapplicable to the Sicilian fevers, however gently and judiciously conducted, or however its effects may be counteracted by the affusion of Currie, or the purgation of Hamilton.

Dr. Irvine affirms, that, in the cure of these fevers, cinchona amply administered was of no sort of use in any stage; that wine and opium were at all times and stages pernicious; that antimonials, although their operation was not unfavourable, were productive of no positive benefit; and saline medicines had likewise very little effect. The use of purgatives he considers as decidedly beneficial, and the more frequently and effectually they were given, the more relief they afforded. They neither stopped the fever, however, nor cured it; but they relieved, in a small degree, every bad symptom, and are deemed by the author indispensable to the proper treatment of fever. The two remedies which evinced the only decided powers in cutting short these fevers, were *blood-letting*, especially from the head, and the *cold affusion*; in aid of which purgatives and blisters were serviceable. At first, Dr. Irvine attempted, according to the usual plan, to lead these fevers to a favourable crisis, but he soon found his inability to accomplish this purpose; which, together with the occurrence of two instances of fatal coma, led him to attend to the early affection of the brain, and to attempt to prevent its progress. "The disease certainly was not hydrocephalus, yet there was not wanting an analogy with that disorder in some instances." He, therefore, began the treatment, when the disease was not more advanced than the seventh day, by taking eight or more ounces of blood from the temporal artery, blistering the head, giving a dose of sulphate of magnesia, and applying the cold affusion. The bleeding never failed to relieve the headache and delirium, and the cold affusion always gave relief to the symptoms, and to the feelings of the patient. The bleeding and blistering were repeated according to the continuance or violence of the disease, and according to the effect produced, and he never desisted while any symptom of determination to the head was visible. After this relief, the cold affusion, which had hitherto given only transient relief, now appeared to have recovered its power. "Its application was generally followed by a regular improvement in the pulse, and diminution of the heat of the skin, and it was seldom necessary to have recourse to it many times before the fever was wholly extinguished." (p. 25.) With respect to the use of cold affusion, Dr. Irvine justly states, that "no specific number of repetitions can be prescribed: *the body is, if possible, to be kept cool.* Sometimes one or two affusions in the day will suffice for that purpose: sometimes twenty will hardly be enough." (p. 30.)

The tediousness of convalescence was very remarkable, especially in those persons whose fever had not been interrupted in its course, by the treatment just mentioned. Sometimes several months elapsed before even a moderate degree of strength was restored.

The appearances on dissection, in those who died, were somewhat various, but generally confirmed the opinion of the chief seat of disease being in the head.

"In some cases nothing very remarkable could be, or was discovered in the brain or its membranes. In others the cerebral veins were turgid with blood. In many there was a red spot on the dura mater, about the middle of the longitudinal sinus, of the size of a dollar. Sometimes a little pus, or rather inflammatory exudation, appeared about this spot. Occasionally the convolutions of the brain were lined with a gelatinous matter, which probably consisted of serum included in cells of a fine membrane resembling the pia mater. In all these cases we have good ground to infer the existence of excessive action at one period of the disease, and in some we can even discern the cause of the comatose state."

None of these fevers appeared to the author to be contagious, nor could he ever observe any thing like the tendency to change on certain days, described by Hippocrates. The practice of that ancient physician, however, which consisted of bleeding from the arm, shaving the head and applying cold to it, and administering glysters, approaches nearly to what the best inquiries of our own time have brought us to adopt. Had he followed the hint, which he often observed, that a bleeding from the nose and ears, in fevers, often preceded a solution, and had he overcome that aversion for purgatives, which the drastic and unmanageable nature of his active cathartics probably inspired, he would doubtless have been more successful.

Sometime about September, the author observes, in beginning his *fourth* chapter, the fevers of Sicily begin to assume a lower type; they are attended with rather more shivering; the headache is less violent; the face less flushed; and the tongue yellower. The pulse does not continue strong for so long a period; and symptoms of debility come on earlier. A great many of those who are most violently affected, become excessively yellow, without any alleviation of their disorder: the stomach is more irritable, than in the summer fevers, and a sort of diarrhœa is often present. The vomiting is bilious, and of a dark-green color; but never black, as far as the author observed. Sometimes the liver is tender, but not frequently, nor considerably so. These fevers occasionally run out to a great length, without often showing any thing like the *interval* mentioned in the preceding chapter; but the patients sometimes die suddenly with apoplectic symptoms. Dr. Irvine thinks they differ from the former class of fevers, most particularly in the more rapid appearance of debility: but he affirms, that when the patient is seen early enough, there has always been headache, flushing of the face, redness, at least wateriness, of the eyes, and beating of the carotids; symptoms, all indicating a determination to the head. (p. 45.) It cannot be doubted, however, we apprehend, that the biliary system is also considerably deranged in these fevers. Nevertheless, as yellowness is not a constant symptom, (Hippocrates thought it a good symptom after the seventh day), and as Dr Irvine says, "it does not appear that fevers without yellowness are at all safer than those with it," or, of course, more deleterious, we may conclude with him, that this symptom is not connected with the essential or dangerous part of the disorder.

"Whether the earlier debility," he observes, "arises from the more violent action on the brain," (Is there any evidence of the occurrence of more violent action?) "or from some other cause, I will not presume to determine: but I can safely state, that the same sort of treatment which I have used in the summer fevers, also proved successful in these. The effect of remedies was not exactly the same in the two. General bleeding was not so useful, and much less frequently extinguished the disease, in the autumn. The necessity of purging was much greater. I have also remarked, that the topical treatment of the head sometimes extinguished danger, when, from being used after the fever had been established for some days, it could not extinguish the disorder. Under the evacuating system, boldly pursued and well directed, I have often seen the symptoms of debility diminish and vanish; and never yet have I witnessed any bad effect from it. To this moment, indeed, I have lost no patient in fever treated upon the topical plan as early as the third day, or even the fourth." p. 45.

Dr. Irvine speaks of a remarkable swelling of the parotid glands, which, in spite of all treatment, goes on to suppuration; and so far from being of a critical nature, as it was esteemed by ancient authors, it terminated fatally in *all the cases* witnessed by the author. (p. 44.) "In the *two* most remarkable cases of this sort," (p. 46) the patients were apparently in a convalescent state, when these fatal tumors began to appear, and the fever recurred with more than its original violence. One of these patients, who was treated first with leeches, cold applications, and purges, then with poultices and fomentations, and afterwards with bark, wine, and opium, died comatose. The other, treated by section of the temporal artery, and other evacuations, topical and general, also died, but not comatose. The brain, after death, was found fuller of venous blood than natural.

Dr. Irvine is perhaps not quite consistent with himself in one point. After having informed us, in the outset, that these fevers are constantly multiplied by the circumstances which give rise to miasmata, and that the connection of stinking effluvia with fatal fevers is notorious among the people, he now says, (p. 48.)

"As to the connection of this sort of fever with marsh miasmata, I am at a loss what to say. It is by many considered as a remitting fever. I do not pretend to decide the point: I am more disposed to regard heat and miasmata as frequently concurring in different relative degrees of force to produce fevers. It is certain, at any rate, that the Sicilian autumnal fevers were cured without bark; and that in very many instances, by far the greater number, no appearance of any intermission or remission was visible."

He is of opinion, however, that these fevers are not infectious; although he is not so decided on this point in regard to the autumnal, as to the summer epidemic.

When these fevers become fairly formed, and therefore run their course, he says, they do not seem to be much influenced by any method of treatment: but he thinks that calomel and James's powder were of some use, probably by occasioning gentle and continued purging. We could have wished that the author had given us some account of the alvine excretions, in these autumnal fevers; as we are persuaded that the variations of the fæces afford the most important indications, as to the administration of purgatives, on the one hand, and to the time when the use of the bark or other tonic may be advantageously commenced, on the other; especially in those fevers, which are accompanied with yellowness of the skin, and other obvious proofs of the disordered state of the hepatic system. But on this subject the author is silent. He states, in rather vague terms, that "touching the mouth with mercury is sometimes useful in cases where the yellowness is great; but it is prejudicial early in the disorder." He is not satisfied that bark, wine, and opium, which were commonly administered in the protracted stages of the disease, were ever of much benefit; but he admits, that in this opinion he may be somewhat influenced by prejudice; and, from having accustomed himself to regard the early arresting of the course of fevers as the great object of medical practice in these diseases, he may have attended too little to the more uncertain benefits of other modes of treatment in the after stages. That the early application of active remedies is the most effectual mode of subduing fever, every practitioner will allow; but we think that experience will by no means sanction that sweeping inference which our author is disposed to take up, that subsequent treatment will not materially alter both the duration and the degree of severity of fevers. In the fevers of this country, it most assuredly will: and it is perhaps sufficient to mention the fact, of which we have witnessed numerous instances, that a total change of symptoms, from delirium, with frequent small pulse, ferrety eyes, black tongue, great postration of strength, &c. to perfect self-collection, and an amendment of all the other circumstances, has been produced at once by removing the patient from a filthy and ill-ventilated apartment, to the airy and cleanly ward of an hospital; and a speedy recovery has ensued, which could not have been expected, had this amelioration of the condition of the patient not been thus produced. We believe, indeed, with our author, that when, by proper evacuations, the local affection of the head or of the abdominal organs has been removed, very little bark or other medicine is required, in general, to restore the constitution to its wonted vigour.

Dr. Irvine concludes this chapter with a well detailed case, treated by his friend Dr. Farrell, illustrative of the benefits of the active evacuations in the commencement of these fevers. In the ensuing chapter, in which the treats of the *winter fevers*, he merely states, that they generally run a mild course, very analogous to that of the ordinary cases of synochus in England, although they sometimes assume a malignant type, and imitate the fevers of summer and autumn; and that they hardly ever fail to yield to the four grand means of cure, topical bleeding, blistering, cold affusion, and purging; and require less activity of treatment, than the other fevers. He observes, that, on the one hand, the cold affusion is not permanently beneficial, until the morbid action in the head is removed by evacuations; and, on the other, that when this topical affection is removed, the fever, though always mitigated, does not necessarily subside, but requires the cold affusion, in many instances, for entirely extinguishing its force. And thus he thinks an obstruction to the successful employment of the cold affusion, of which Dr. Currie was not aware, is easily done away.

With respect to the section of the temporal artery, which has been deemed a dangerous operation by some practitioners, Dr. Irvine makes the following remarks.

"I have, I am sure, ordered the section of the temporal artery to be performed at least three hundred times, and I never saw any accident, however slight, occur but once, and that was merely the loss of a very few ounces of blood during lates, and which resisted the free use of the latter for a long time, and yielded only when opium was likewise administered, affords a striking example of the fact. (p. 88.) He justly remarks that scybala are by no means constantly or even frequently discharged in dysentery, and therefore cannot be deemed the cause of the disease. He recommends oil of turpentine, applied to the abdomen on flannel, as a rubefacient, for the purpose of removing the pain and tenderness of the abdomen; and anodyne glysters, with a drachm and a half of tincture of opium, and four ounces of starch mucilage, which may be repeated three times a-day, as affording much relief to the bowels.

Phthisis is very common and very fatal in Sicily, where it is generally believed, but apparently without any foundation, to be contagious. Nevertheless the author affirms, that if the phthisical "patient is careful to guard against the heat of the summer, by remaining within doors in the middle of the day, and to provide against the chilliness of the colder season, by preparing a house for his own accommodation, not forgetting a fire-place or stove, he will find the Sicilian climate, if not the best in the world, at least greatly more congenial to his frame than the fogs and rains of England, the effects of which no care can entirely prevent." p. 99.

In chapters tenth and eleventh we have some brief observations relative to *hepatitis* and *rheumatism*. The chronic hepatitis is more common than the acute. A morbid state of body, connected with hepatic derangement, in which the patient is sallow, weakly, loses his appetite, has a foul tongue, and is costive, and sometimes slightly feverish in the evening, occurs in the end of summer, and is speedily relieved by daily and smart purging, by means of which an immense quantity of bile is carried off. The sulphate of zinc is sometimes combined with the cathartics with advantage in this complaint. Rheumatism is one of the most common diseases in Sicily, and nearly as obstinate as in this country. The chronic disease yielded most readily to mercury, which was introduced into the system by friction; and bark was found of little service, except where there was great debility and emaciation from other causes.

The warm bath was in general "of wonderfully little use" in this form of rheumatism.

The work is concluded by some observations on the medical use of *borax*, and on *erysipelas*, which compose the twelfth chapter. A solution of borax, in the proportion of half a grain to an ounce of water, is considered by the author as a most effectual remedy for the ulceration, which takes place behind the ears of children, and which solutions of lead do not cure. We should be disposed, however, to doubt the permanency of such a cure; since the disease has generally appeared to us to be in some measure constitutional, and to yield readily to small doses of mercurials, acting gently upon the bowels daily, independently of any particular local application. Dr. Irvine found, that this boracic solution was altogether useless, when applied to the inflammation of the pudenda in children, which he had conceived to be an analogous complaint, and which yields readily to a weak solution of acetate of lead.

The purport of the author's observations on erysipelas is to defend the practice of applying refrigerant lotions to the skin in that disease, especially weak solutions of lead. This practice is also commended by other writers*; and, for our own parts, we have been in the constant habit of employing cooling lotions, such as equal parts of aq. ammoniæ acetatæ and water, &c. in erysipelatous inflammation, with great benefit, and with immediate relief to the feelings of the patient, which the application of farinaceous powders most commonly aggravated, or failed to relieve: but very able surgeons deprecate the indiscriminate use of them†. Dr. Irvine has not found the saturnine solutions of any advantage "in the *zone*, which surrounds the waist, and is accompanied with a pustular eruption." The term *vesicular* eruption would have been more correct; for such it invariably is in the first days of the disease: and as to shortening its course, we believe it were as easy to abbreviate the duration of the small-pox: it will only terminate at its usual period‡. It is properly a *herpes*, and not an erysipelas.

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* See Cooper's Dictionary of Practical Surgery, and also his First Lines of the Practice of Surgery.

† See Pearson's Principles of Surgery. Chap. x. Sect. 4.

‡ See Edin. Med. and Surg. Journal, for April, 1811, p. 239.

the night, by which the patient was much benefited. This arose from the artery not being cut across after the operation, which effectually prevents any danger. The artery may be opened either with the lancet or scalpel, but the latter is best. By judiciously selecting the part to be cut, it may be opened several times on each side without any inconvenience: and the cases are very few indeed, so few as to be unworthy of consideration, in which a great deal of blood may not be obtained by a dexterous operator from some part of the head." (p. 63.)

In the sixth chapter, the author briefly, and with becoming caution as to the use of hypothesis and analogical inferences in scientific inquiries, suggests the probable advantages of this practice in other climates. In the propriety of this suggestion we acquiesce to a considerable extent; since every day's experience has tended to confirm the notion, that many of our own fevers, which are characterized by a typhoid disposition, but in which the functions of the sensorium are disturbed or other obvious marks of congestion or disordered vascular action in the encephalon occur, are allowed to pass into the typhoid type from an omission to remove that morbid condition of the head, by local evacuants, in the outset. Indeed, although there may be a multitude of routinists, who continue to apply wine and bark as soon as they hear the word "fever," we are sure that no thinking and observing physician now employs those medicines in the early stages of *any fever*, in this country: and we are equally persuaded, from observation, that, if the prejudices of education, and the shackles of hypothesis in regard to the nature of debility, were cast away, the same medicines would be shunned, even in the late stages of typhoid fevers, wherever delirium and restlessness, accompanied with flushed countenance, and suffused and ferrety eyes, occurred. Nevertheless, that there are fevers, which may be strictly termed *gastric* fevers, in which the head suffers only by sympathy with the stomach and hepatic system, and which are to be cured by remedies operating upon these organs only and directly, we think observation will also evince, at least in this country. It is in these, perhaps, more particularly, that the necessity of full and repeated purging is evinced by the striking benefits which result from it, as depicted by Dr. Hamilton. Dr. Irvine strongly, and we are disposed to believe, very justly, recommends the consideration of this plan of topical evacuation to his brethren within the tropics, with a view to the early suppression of the yellow fever.

Intermitting and remitting fevers form the subject of chapter seventh, and are discussed with brevity, but elicit some interesting practical remarks. Intermittents are very common in Sicily in the autumn, and seldom fatal. The cinchona appeared to be the most effectual remedy; but arsenic and the sulphate of zinc were also powerful agents; and little or no previous evacuation was required. If the pulse was strong, the face flushed, and more headache than usual occurred, with a sense of heat in the stomach, the sulphate of zinc, given in doses of a grain and a half every two hours during the intermission, was more successful than the bark. "It seemed to remove the inflammatory diathesis, and often cured the fever alone." In all cases it rendered less bark necessary. Dr. Irvine found few fevers that resisted the action of arsenic for more than three days, and never saw any ill effect from it. He remarks, however, that there is a great deal of idiosyncrasy in these diseases. One man will be cured sooner by bark, another by arsenic, and a third by sulphate of zinc: whence the author seldom continued the use of any one of these more than two days, unless obvious advantage was derived from it.

With respect to remittent fevers, they are much less manageable by medicine. In some cases, which occur in the summer, bleeding suddenly converts them into intermittents; but the autumnal remittents will not bear this treatment, unless very early used; the symptoms of debility soon ensue. "The most beneficial practice in such a state," the author observes, "has, according to my experience, consisted in active purging, which is of the greatest benefit. Cinchona is of little service, unless in pretty clear remissions. Wine in the latter stages cannot be refrained from." p. 78.

The eighth chapter, which relates to dysentery, contains a good account of that disease; but little novelty in respect to the treatment. On the whole Dr. Irvine does not seem to have been sufficiently aware of the value of opiates, *combined* with purgative medicines; although the case of Champion, which he re-ing any of these, as generic terms, we approximate to the general acceptation in which they were anciently employed, and at the same time define the exact sense in which we appropriate them, no confusion can arise; but, on the contrary, the adoption of them will rather assist the comprehension of the reader, in acquiring a knowledge of the diseases intended to be designated by them. Now although the terms ἱδρῶα and ἔκζεμα, as well as the corresponding Latin terms "*sudamina*, and *papulæ sudoris*," have doubtless been applied to the *miliary vesicles* connected with sweating in fevers, and to other eruptions of a similar kind, originating from the irritation of the heat of the sun, acrid applications, and other causes, as well as sometimes perhaps to mere *papular* eruptions; yet it seems obvious, that an extensive efflorescence or ebullition, as it were, of inflammatory points, set thick over the body, has been generally understood by these terms, both among the ancient and modern writers in those two languages: and as, on the one hand, the word *miliaria*, has been appropriated to the sudamina, arising in the sweating stage of fevers; and, on the other, the *papulous* eruptions have been designated by the term *lichen* in Dr. Willan's arrangement; so the appropriation of the term *eczema** to the profuse eruption of minute vesicles, originating from irritants, and not the result of previous fever, according to Dr. Willan's method, seems to be convenient and advantageous. It is convenient, because it expresses to the learned something of the nature of the eruption; and it is advantageous, in a systematic view, because it comprehends several varieties of the same sort of eruption, resulting from different exciting causes.

Dr. Alley divides the disease in question into three species, or rather varieties, according to the degree of mildness or severity of the symptoms, denominating them hydrargyria *mitis*, H. *simplex febrilis*, and H. *maligna*, respectively. The first species, he says, "has, at a first view, nothing to characterize it further than the light rose-coloured efflorescence already mentioned. An attentive observer, however, by holding the affected parts between him and the light, and keeping his eye on a level with them, may perceive the surface to be studded over with innumerable, minute, and transparent vesicles: but to the naked eye the vesicular appearance is sometimes with difficulty perceptible. As the eruption strikes out, the surface is affected with a prickling heat and itching; and in some cases, for a few hours, there is slight headache and nausea." It generally appears first about the upper and inner parts of the thighs, the scrotum, groins, and lower part of the belly; sometimes it extends no farther, but at others it spreads over the whole body, the vesicles being so close and numerous, as to present one uniform suffusion. The red colour recedes on the application of pressure, and returns when that is removed. Dr. Alley observes, in a note, that "the colour of the skin has, in some cases, been so little changed, that no eruption seemed to precede desquamation. In such cases, however," he adds, "there was much itching of the skin, and the surface was rough before the cuticle had begun to exfoliate." (p. 24.) But we have little doubt, that, had the cuticle been examined through a convex lens, this roughness would have been found to consist of vesicles. This species, the author states, soon degenerates into the second, and even into the third, if the use of mercury be incautiously continued after the appearance of the eruption. This, however, is not always the case, according to the observation of Mr. Pearson.

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* The term is from ἐκζέω *effervesco*. Aetius thus describes the eruption: "Fiunt in toto corpore pustulæ, dolorem cientes, citra saniei collectionem. Eas eczemata, ab ebulliente fervore, Græci vulgo appellant." Tetrab. IV. Serm. I. Cap. 133. As a specimen of the modern acceptation, we may state the following definition from Sauvages. "Exanthemata illa dorsum, pectus, brachia, crura sæpius afficiunt, numerosissime consita, rubra, pungentia, acriter dolentia." Nosol. Meth.

The second variety "is preceded by languor, restlessness, and rigors; is accompained with much heat and itching of the skin, and is considerably more rough to the touch than the efflorescence in the former species." (p. 26.) Before the spots are crowded together, the eruption somewhat resembles the measles; but they are larger, Dr. Alley says, and do not afterwards appear in the annular form, pointed out by Dr. Willan as one of the characteristics of rubeola. By the aid of a magnifier, we believe, the vesicular appearance may be always detected, even in the early stages. Mr. Pearson justly remarks, that, "the vesicles, which contain a pellucid fluid, are, at their first appearance, so small, that they cannot be easily distinguished from papulæ without the aid of a convex glass; they are then seen to be distinct, each vesicle being surrounded by a circle of redness; and, if they are not ruptured at an early period, they acquire the size of a large pin's head, at which time their contents are opaque and puriform." (loc. cit.) There are, in this second species, symptoms of fever; such as headache, nausea, whiteness of the tongue, thirst, heat of skin, and accelerated pulse, together with an oppression about the præcordia. Desquamation commonly begins about the fourth day, but sometimes later, leaving the skin underneath red, and disposed to throw off successive crops, which diminish in severity until the cuticle remains whole.

The third variety, *Hydrargyria maligna*, begins like the preceding, but its distressing termination may be anticipated from the following symptoms: "1. The sense of burning on the surface is experienced to a very painful degree. 2. The actual heat of the skin becomes intense. 3. The soreness of the throat and fauces is extreme. 4. The colour of the eruption is darker, rising sometimes even to purple; and there is considerable tumefaction of the surface. 5. Vesicles of a larger size than in the former species precede desquamation." (p. 29.) The vesicles are so numerous, that the whole of the cuticle desquamates from the surface of the body; and, where the larger ones are ruptured, they pour out a very acrimonious discharge. As the disease advances, the exudation from the surface becomes more acrid and viscid, and acquires a most offensive odour.

"During the entire course of the disease, there is very great anxiety and depression of spirits. Sleep is almost wholly banished; and opiates procure, at best, but very short intervals of repose. The misery of the patient, under these circumstances, can scarcely be conceived. To his mental sufferings, which form no inconsiderable share of his agony, is superadded the most exquisite bodily torture: for the surface is either left raw and unprotected, or the cuticle, hardened by the exudation which serves to give it partial adhesions, aggravates his torments. The pain which motion produces was aptly expressed by a patient of Dr. Spens: 'he felt,' he said, 'as if his flesh was cracking in pieces." (p. 36.)

In truth, no object can be more distressing to look upon, than a patient in this condition, when, from the rawness and tenderness of the whole surface, every point of contact with the bed on which he lies irritates like the pricking of needles. The desquamation does not take place so early, in this malignant variety, as in the former, not commencing in some cases until eight or ten days after the appearance of the eruption.

Dr. Alley gives the following table of the results of all the cases that he had witnessed during the last ten years:

	Hyd. mitis.	H. simplex febrilis.	H. maligna.	Total.	Cured.	Died.
Male	6	12	10	28	22	6
Female	4	7	4	15	13	2
Total	10	19	14	43	35	8

The exciting cause is clearly the irritation of mercury, and that, in Mr. Pearson's opinion, independent of the action of cold, or of the quantity of mercury employed. A peculiar idiosyncrasy, that is to say, some unknown state of constitution of the persons thus affected, is the only explanation which is attempted to be offered for its occurrence.

Dr. Alley has taken considerable pains in collecting and detailing analogies, in the effects often produced upon the skin by the influence of other irritants, besides mercury, whether externally applied, or taken into the stomach; such as almonds, mushrooms, herrings, crab-fish, muscles, and lobsters; the juice of the bitter cassada, several fruits, and vegetable substances, &c. when swallowed; and cantharides, camphor, the Indian varnish, the oil of the cashew-nut, &c. from contact with the skin. Few of these, however, are probably vesicular. We have seen the distinct wheals of urticaria following the use of muscles; and erythematous or papulated eruptions occasioned by other irritants to the stomach.

In the treatment of H. mitis, the author states, that "little more is requisite than to discontinue the use of all mercurial preparations, to remove the patient from the apartment in which they have been exhibited, and to advise tepid ablution of the body, and some gently purgative medicine." (p. 58.) In the simple febrile, and malignant species, the same plan of treatment is, during the eruptive stage, always applicable. Dr. Alley agrees with Mr. Pearson in his observation, when he says, "although the troublesome symptoms which arise, may be relieved by their proper remedies, I am doubtful whether any plan of treatment has the power of interrupting its regular course, or abridging its duration." (Loc. cit. p. 177.) Dr. Alley strongly suggests the probable utility of the cold affusion, during the primary or eruptive fever, in order to reduce the excessive morbid heat; which, though itself a consequence of the fever, becomes in its turn a cause of much irritation, the source of fresh excitement and of new disease; leading to debility, gangrene, and putrid re-absorption, which are followed by diarrhœa, defection of the mental faculties, and death. Yet it is singular, that he is either a sceptic in regard to the truth of his own suggestions, or, that they only occurred to him while writing his book; for he leaves the remedy to be *tried* by other practitioners, not having suffered one of his forty-three patients to have the benefit of it. Of *tepid bathing*, however, he has made some trial, and found it beneficial in the eruptive stage. *Purgatives* are deemed by Dr. Alley the most effectual remedies, in conjunction with immersion, for abating the excessive heat, which is the sure precursor of an aggravated disorder. The *acids*, he observes, however serviceable as antiseptics, and in relieving thirst, are seldom admissible in the secondary fever, unless combined with opium, as diarrhœa is commonly present. In the desquamatory stage, opium is necessary to relieve the incessant irritation, but of course it is to be sparingly, or not at all employed in the eruptive fever. The bark of cinchona aggravates the pectoral symptoms, Dr. Alley states, and therefore we are deterred from its exhibition, although it might be deemed appropriate during the purulent desquamation; and he considers *wine* not only as an excellent substitute, but as constituting, together with a constant supply of light nourishing diet, our chief dependence.

"As to the most proper external applications in the desquamatory stage, practitioners have varied in their opinions. Cleanliness is with some the only object; but others have, with much justice, extended their views to the prevention of re-absorption from the surface, and to the generation of a new cuticle. In addition to frequent warm bathing or gentle tepid ablution, the application of absorbent powders will be found useful; and finely levigated carbon. zinc. simp. pp. and meal, separate, or in a combined form, may be employed with good effect for this purpose." p. 70.

The author deprecates the use of saturnine applications to so large an exposed surface.

We have thus given a meager sketch of the contents of this monograph. Dr. Alley has detailed, with minuteness, every thing that can be said on the subject, and evinced a considerable share of reading upon collateral topics. But on the whole, this dilatation has the effect of weakening the impression of the picture, and of rendering it less clear, than the terse and comprehensive view given by Mr. Pearson. Dr. Alley has added three plates, illustrative of the three forms of the complaint; and he considers them as good representations of the appearances. They may, perhaps, serve to recall the recollections of those who have already seen the eruption; but we are sure that they are very far from affording a correct notion of it. Nothing like vesicle, even in the most imperfect degree, is represented, nor perhaps could be depicted on so small a scale. The eruption seems to consist of mere brown *maculæ*, not unlike pityriasis or some of the varieties ot roseola.

We cannot terminate this article without expressing our regret that Dr. Alley is no more, and that our hope of having him soon again before our tribunal is at an end. He died of typhus fever at Fermoy.

Medical Histories and Reflections. By JOHN FERRIAR, M. D. 3 Vols. 8vo. New Edition, 1810.

[From the Edinburgh Medical and Surgical Journal, for April, 1811.]

THE nature and object of this work is well known to be in imitation of Dr. Home's two valuable publications, and to consist of clinical or practical commentaries on the cases which came under the author's care. To this new edition there are fewer additions than were expected. Since events lead to experience, and experience to improvement, we regret that Dr. Ferriar has been prevented from publishing the results of his enlarged experience of seventeen years.

Under the head *diabetes* some additional observations are given, confirming the author's former plan of treating the disease as a disease of debility. The medicines employed were a combination of Peruvian bark, uva ursi, and opium, in the proportions of a scruple of each of the former to half a grain of the latter, four times a day. The doses were taken with lime water, which was also directed for the patient's common drink. Three cases of confirmed diabetes mellitus are reported *cured* by this plan. Some tables are given to show the increase and subsequent diminution of the urine during six months; but the quantity of drink, or liquid and solid ingesta, is not stated; therefore the tables are of little or no use:—they furnish no inference but what is universally known; and they fail to show the only particular circumstance which is at present disputed, viz. the relation which the quantity of drink bears to the urine discharged. The blood and the urine of one patient were analysed by Dr. Henry; he detected *urea* in the diabetic urine, and nothing particular in the blood.

Some additions are made to the chapter on epidemic fever. We shall quote them for the benefit of our readers, and especially for those who possess the first edition of this work.

"The fever generally prevalent in Manchester, and the surrounding country, is a mild typhus. But in particular seasons, it is attended by symptoms which are not clearly indicated by practical writers, and which I think it proper to mention, because they are equally unexpected and distressing to the practitioner.

"In the second or third week of typhus, when the fever appears moderate, and the probability of recovery is strong, a sudden determination takes place to the head or breast, sometimes to the bowels, accompanied with extreme pain, and the patient is carried off in the course of a few hours. I have seen the metastasis, in the genuine typhus, and in very young subjects, as rapid as the translations in gout. If the patient survives these attacks, the fever sometimes changes its type. In one case, where a typhus was unusually protracted, after several hazardous determinations to the stomach and bowels, the fever assumed the form of an intermittent, and the patient was recovered with great difficulty, by the use of the strongest stimulants.

" The frequency of such accidental metastasis as that I have described, in our fever-wards in 1805, and the spring of 1806, was truly alarming. Dissection threw little light on their nature, and only served to show that they depended more on changes in the nervous, than sanguiferous system.

" Towards the end of autumn, we are generally visited by remittent fevers; and I scarcely recollect a season, in which some obstinate cases of this nature have not occurred, which resisted all the usual methods of cure. A succession of melancholy events of this kind induced me to look for a more powerful tonic than bark or steel; and, from the analogy between intermittents and remittent fever, I turned my thoughts to the employment of arsenicum album, for the revival of which, as a medicine, the public are indebted to the late Dr. Fowler. I soon had occasion to employ it in some very dangerous and tedious remittents, and I found it a safe and certain remedy. It generally lessens, if it does not suspend, the second paroxysm after it is exhibited, and it affects the purpose without producing the slightest disturbance in the habit. I have generally given, to an adult, five drops of the saturated solution, every four hours, and I have seldom found it necessary to exceed this dose.

" In one case, where I ordered this remedy, the remittent had continued six weeks, in another, nearly two months, without any abatement of the symptoms, and both patients were sinking fast into the grave, when they were saved by the use of arsenic. The only sensible effects produced by it, are the removal of the crust on the tongue; the appearance of a sediment in the urine; and increased firmness of the pulse.

" Having frequently experienced the efficacy of this medicine in remittents, I was induced to try it in the last stage of typhus, when neither bark, wine, or brandy, cold-bathing, or occasional doses of Cayenne pepper, had the effect of rousing the powers of life, or of lessening the thick crust, which lay like a black marble slab on the tongue. With such cases, every man in extensive practice must have met; it has often been my lot to encounter several of them, in the course of a few weeks. I found that the arsenical solution uniformly cleared the tongue, in two or three days, and that the fever gave way rapidly afterwards. The favourable alteration, after the change of medicines, was too great to admit any doubt respecting its cause, and the number of such events, which I have witnessed, leaves no room for uncertainty. It is a singular advantage, attending the use of arsenic, in these cases, that it does not operate as a general stimulant, but merely as a sound tonic. Neither the concomitancy of cough or dyspnœa, therefore, prohibits its use in typhus. The only contra-indication is a tendency to diarrhœa, or nausea. Yet I have been able to give the solution in the dose of two or three drops for a dose, even when the bowels have been very irritable, by combining it with a small quantity of laudanum.

"As soon as the feverish paroxysms are stopped, I think it prudent to suspend the use of the arsenical solution, and to support the patient with bark, and different cordials. But I never saw any inconvenience from the use of the mineral, excepting a slight soreness of the throat and lips.

"I also make it a rule to delay the exhibition of this medicine, till it is evident that the usual remedies are not likely to succeed: in producing an agent of such powers, there ought to be a "dignus vindice nodus;" and its administration ought to be considered as a matter of solemnity, as its abuse would prove so extremely pernicious, in rash and ignorant hands.

"In the course of the last twelve months, I have met with some cases of typhus, in which there was a very distressing dyspnœa, which continued during the whole fever, without any appearance of inflammation. In general, the difficulty of breathing was continual, though aggravated during the febrile exacerbations, but in one case respiration was perfectly free, during the intervals of the paroxysms, and regularly became very difficult on the return of the hot fit.

"In these circumstances, which precluded the use of bark, I had recourse to the extract of the ratania root, lately introduced (at least, lately known by that name) from South America, and I have found it a valuable substitute for the cinchona. The intense bitter of the extract is softened to an agreeable astringency, when it is dissolved in water, (by the intervention of a little alcohol) in the proportion of from five to ten grains to an ounce, and its effects on the patient's strength and spirits are peculiarly cheering. Its flavour, in this state, strongly resembles that of port-wine, and its operation in fever appears to me very similar.

"The extract of ratania, notwithstanding its sensible quality of astringency, does not produce costiveness; in this respect also, it frequently merits a preference to Peruvian bark.

"Since the establishment of our fever-wards, I have carried the practice of cold-bathing to a considerable extent, in the latter stage of typhus and in the commencement of scarlatina anginosa.—I shall make some observations on this subject, in the third volume."

In the second volume, we find some additional practical remarks introduced, in describing the remedies of dropsy. Dr. Ferriar's late experience has confirmed his opinions delivered in his former publications upon this subject. He has adopted a remedy with considerable advantage, which consists of several liquid diuretics combined; and though the formula appears a farrago, it seems well entitled to be more extensively employed. It is as follows:

"R. Oxymel. colchic.
——— scillæ.
Tinct. nicotianæ.
Spir. æther. nitros. āā p. æ. Misce.

Capiat cochleare parvulum, ex aquæ pauxillo, quater in die.

"When an additional stimulus is wanted, in debilitated habits, about ten drops of tinct. cantharid. are added to each dose. The usual quantity of cream of tartar is given early every morning, and the patient begins to use the diuretic drops in the forenoon. In very costive habits, it is sometimes advantageous to add a portion of syrup of buckthorn to the farrago; and I frequently join the tincture of digitalis to it, in such doses as the patient can easily bear." p. 200.

Gamboge, tincture of lytta, and extract of elaterium, are recommended as powerful diuretics. Two things have often surprized us in reading over this learned author's histories and reflections upon dropsy; first, the prodigious number of cases in a given time; and secondly, the readiness with which they yielded to the treatment employed.

The concluding paragraph of the paper on the effects of pneumatic medicine is omitted, and the following substituted in its place:

"All hopes from this source are now completely abandoned. I had occasion some years ago, to observe to the late Dr. Currie of Liverpool, that the chemical theory of diseases was merely the humoral Pathology elevated in the form of vapour, in which he agreed with me," p. 279, but in which we do not, because no reasons are given.

At the conclusion of the second volume, a controversial appendix is with great propriety omitted, and the author's valuable essay on Digitalis is inserted, much to the credit and advantage of this second edition of his works. The merits of that essay are too well appreciated to require any commendation at this time; it deserves repeated perusal.

The third volume commences with an essay on rabies canina, with the addition of two cases by Mr. Cock, surgeon, of Ashton under Lyne, which terminated fatally. As there was no reason to suspect the existence of canine madness in the town or neighbourhood, excepting in the animal which bit these persons, Dr. Ferriar thinks "the statement affords full proof of the sporadic origin of the disease in dogs, contrary to the opinion proposed by Mr. Meynell, and inconsiderately adopted by one or two medical men. That opinion might indeed be refuted by the now established effect of fever-wards, which are capable of arresting the progress of an epidemic, by separating the sick, but which do not prevent the sporadic generation of infectious fever in individual cases." p. 60. But to this remark it may be objected, in the first place, that the laws which the contagion follows in animals are hitherto very imperfectly ascertained; and secondly, the effect of fever-wards is a comparison, but not an argument. To prove his point, Dr. Ferriar should show, that small-pox and syphilis have a sporadic origin.

The following extract from the account of fever-wards, will be read with lively interest by those who watch the improvement which has taken place within these few years in the management of infectious diseases.

"The success attending the establishment of our House of Recovery, has exceeded the warmest expectations of its supporters. But during several years, we were limited in space, and unable to receive the whole number of patients, whom it was expedient to admit. Some adjoining and neighbouring houses were therefore occasionally engaged in the same street, for the admission of patients; and thus, without any previous intention on our part, a set of experiments was made respecting the distance to which contagion will extend. In the first instance, no person suffered in the neighbouring buildings, where the street was only four yards wide, the windows of the occasional fever-ward being generally open, and the house full of patients. In another instance, a house, capable of containing twenty-five patients, not at all separated from the adjoining houses in the same row, was used for twelve months as a fever-ward, without the occurrence of any fever in the immediate neighbourhood. Thus the *experimentum crucis* has been tried, and the innocence of contagion, when properly diluted with atmospheric air, is fully established.

"So completely were the public now convinced of the utility of the plan, that a subscription, suitable to the opulence and spirit of the town, was raised; a large area was purchased, and a Fever-Hospital erected, capable of easily containing an hundred patients. The expense of the building was upwards of 5,000*l.*—Since it has been in the power of the physicians to admit every case of infectious fever, as it occurs, we have felt ourselves completely masters of the disease. Epidemic typhus is now unknown to us, while it has been raging in some of the neighbouring towns. A part of the space is appropriated for the reception of patients in scarlatina anginosa; and although this disease has been repeatedly introduced into the town, generally from Liverpool, and lately from Yorkshire, its progress among the poor has always been checked, by the removal of the patients."

The mortality of fever-patients has varied considerably in different years, as the following table will show.

Years.	THE NUMBER OF PATIENTS.				Proportion of Deaths.
	Admitted.	Cured.	Dead.	Remaining at the end of each year.	
From 1796 to 1797	371	324	40	7	1 in 9†
1797—1798	339	300	16	23	1—20-
1798—1799	398	360	27	11	1—14†
1799—1800	364	315	41	8	1— 9-
1800—1801	747	645	63	39	1—11†
1801—1802	1070	956	84	30	1—12†
1802—1803	601	539	53	9	1—11†
1803—1804	256	215	33	8	1— 7½
1804—1805	184	144	34	6	1— 5¼
1805—1806	268	235	—	4	1— 9-
Total	4588	4033	391		

Some additional cases of an affection of the lymphatic vessels are published, which prove the existence of this complaint, independent of pregnancy. The following paragraph is appended to the short chapter on Hooping-Cough.

"The beneficial effect of the limestone soil in Derbyshire has long been known to the old practitioners of this town, in the cure of hooping-cough, and I have had an opportunity of verifying it in some very striking instances. If the climate of the Peak were milder, I am persuaded that many cases of spasmodic asthma might be relieved by residence at Buxton; it is a well known fact, that broken-winded horses are free from their complaint, while they remain there. This may be attributed in some degree to the quantity of lime which the brooks hold in solution; and in some measure to the impregnation of the atmosphere, from the numerous lime-kilns in the neighbourhood."

Some other additions which we have discovered on a comparison of the former volumes with the present, consist of a few remarks on the subordinate power of nitrous acid in syphilitic cases; some observations on the venereal disease, not very clear or convincing; and a note respecting the treatment of the Walcheren fever, in which the *liquor arsenicalis* is recommended.

Entomologie und Helminthologie des Menschlichen Koerpers, oder Beschreibung und Abbildung, der Bewohner und Feinde disselben unter der Insecten und Wuermern. Von D. Johann Heinrich Joerdens, &c. &c. 4to. Vol. I. pp. 319, 15 coloured plates, Hof. 1801. Vol. II. pp. 154, 7 coloured plates, Hof. 1802.

[From the Edinburgh Medical and Surgical Journal, for July 1812.]

No apology, we apprehend, is necessary for giving an account of books, though not recently published, provided they be new or scarcely known in this country. The copy of the publication lying before us we obtained with great difficulty, some months ago, and is, we believe, the only one in this kingdom.

Mr. Joerdens considers his subject in the most extensive point of view, as he includes, not only the insects and worms which infest the human body exclusively, but also those which are only occasionally injurious to it, and even those which contribute to its disorganization after death. Of each of the numerous species which this plan obliges him to notice, he details minutely the systematic history; gives one or more coloured figures of the insect, larva, &c.; describes accurately the injury which it does to the human body, as well as the means of remedying it; and to the whole prefixes a very copious literature. This extensive view of the subject has, no doubt, materially increased the size and expense of the work, but we do not think unnecessarily, because it has enabled him to collect together an immense mass of curious information, for which there would otherwise be no proper repository.

The first volume, besides an introduction, treats of the insects which infest the human body externally, and the second, of the intestinal insects and worms. The introduction is not very important; Mr. Joerdens puzzles himself to find out some use for these troublesome and hurtful companions; for it is evidently quite ridiculous to suppose, that such means were necessary to induce us to take care of the cleanliness of our persons,—to warn us against improper food,—to contribute to our health by devouring the excessive mucus in the intestines,—or finally to terminate our corporeal existence after we had completed our destiny in this world.

The injury which these animals inflict on the human body, may be either mechanical, chemical, or mixed. Of the first kind are the wounds of all those which are not furnished with any particular acrid or poisonous secretion to insert into the the wound. The second class includes only cantharides, the *Coya*, the larva of the *Vinula*, and a few others. The last division, which contains those which poison the wound they inflict, is by far the most numerous. This is evident from the effects produced being totally disproportioned to the mechanical injury, frequently producing erysipelatic inflammation, vesicles, ulcers, swelling of the wounded part, with redness and pain,—or on the contrary, insensibility and numbness, accompanied by fever, paleness of the countenance, increased flow of tears, swelling of the body, trembling of the limbs, depression of the vital powers, cold sweats, fainting, spasms and convulsions.

The chemical nature of these poisons is totally unknown, but their production does not seem to depend on the irritation of the animal when inflicting the wound. On the other hand, it seems intimately connected with the temperature of the atmosphere, as many insects, which are innocent in winter, and cold climates, become dangerous in summer, and in hot climates.

Mr. Joerdens then proceeds to consider the influence which the season of the year and atmospheric temperature, the aliment and condition of the insect, and the age, sex, and constitution of the person wounded, have upon the effects of these poisons; but the ready explanation, which he has constantly coupled with his statements, makes us strongly suspect that they are derived from hypothesis rather than observation. His preface is concluded with a very general account of the remedies to be used against the bites and stings of poisonous insects.

The first subdivision treats of those insects which live only in the human body, and can propagate themselves in it alone. These are, so far as we yet know, only six in number: the

Musca lepræ, *Pulex pruriginis senilis*, *Pediculus humanus capitis*, *corporis*, and *pubis*, and the *Ascarus scabiei*. He commences his account of the first of these with the following judicious observations.

"Foul ulcers of all kinds, which are exposed to the air, and the tribes of insects inhabiting it, especially in warm weather, are common nests for certain kinds of maggots and larvæ. This was known to the ancient Greeks, as I shall have occasion particularly to mention, when speaking of flies hurtful under certain circumstances only. Galen and Ægineta were acquainted with the fact; and among the moderns, it is most fully noticed by Hauptmann, Lange, Plater, Sennert and Borelli, but especially by Steenever, who has not only supplied the exact description of these maggots, but also given representations of them in their various states. As is still the case, at that time, too general conclusions were derived from general observations, and because worms and insects were found not only in foul ulcers and wounds, but also in various cutaneous eruptions, they were considered as the causes of most diseases to the exclusion of miasmata. Even the great Linné and his contemporaries acceded to this opinion, and added to its popularity by the authority due to their spirit of investigation; and not only all eruptions, but syphilis, the plague, and many other diseases, were ascribed to worms and insects. But the diversity of insects found in different cutaneous diseases, does not entitle us to consider them as their cause, but rather as their consequence. For every insect which derives its nourishment from acrid, fermenting and putrid substances, does not therefore thrive, wherever there is fermentation or putridity, but different degrees of these are congenial to different kinds of insects. Hence, a particular insect may exclusively be nourished in particular cutaneous sores, without having the least connection with its form or malignity, just as other insects, which live on fresh and entire substances, are not indifferent in the selection of their food."

The second subdivision is allotted to those insects which do not inhabit the human body, but are remarkable, on account of the inconveniences or diseases which they occasion in it. These are again divided into three sections. The *Cimex lectularius*, *Oestrus hominis*, *Pulex irritans*, and *P. penetrans*, are included in the first as insects which commonly and especially infest the human body. The second section contains the description of 94 species, which only injure it under certain circumstances; and the third section is devoted to those insects which appear in the human body as a very uncommon occurrence, such as insects under the skin and in the muscles, in the frontal sinus, in the eyes, in the maxillary sinus, in the nose, ears, mouth, trachea and lungs, stomach, intestines, urinary organs, mammæ and female organs of generation.

The third and last subdivision of this third volume, is the history of those insects which are nourished and propagated in the dead human body in its different stages of decay.

The second volume is more interesting to the practitioner. It contains three sections; the first treating of worms peculiar to the human body; the second, of worms only occasionally injurious to it; and the third of those accidentally found within the human body: and in an appendix, he has collected the histories of some undetermined insects and worms, of fabulous cases, and of various amphibia, and other animals said to have been found in the human body. In the introductory chapter to the section on intestinal worms, Mr. Joerdens states at great length his grounds for believing that their eggs are introduced into the fœtus with the blood of the mother, or into the infant with the milk of the nurse. From the latter supposition he draws a practical conclusion, that, in choosing a nurse, we should be particularly careful that she never has been affected with worms. He also hints, that the saliva may be the means of introducing the eggs of intestinal worms, in those countries where nurses have the abominable practice of previously chewing the food they give to infants. But besides the introduction of the eggs, a certain predisposition is necessary for their development in the intestinal canal, and which seems to be connected with a warm and moist atmosphere, and the deficiency of food, or the use of unwholesome food in times of scarcity.—In the observations on the symptoms, diagnosis, and method of cure of intestinal worms, there is nothing worth noticing, except that he nowhere mentions the oil of turpentine, lately used with so much success, as a remedy ever suggested. The intestinal worms described by Mr. Joerdens are,

1. *Tricocephalus hominis.*—This worm was discovered in

1760, by Wagler, and is rare. It is most commonly found in the cœcum of persons who have suffered from great accumulations of intestinal mucus. Nothing certain is known of symptoms peculiar to its presence, or of the means most successful in expelling it, but Mr. Joerdens recommends saline medicines, from their action in dislodging intestinal mucus.

2. *Ascaris vermicularis*.—Of the numerous accounts of these well known inhabitants of the rectum, Mr. Joerdens thinks that those of Goeze and Van Phelsum alone deserve the epithet of classical. They are easily distinguished from young lumbrici, by the vivacity of their motions when exposed to the light. The anatomy of the male is given as well as that of the female, and suppositories of bacon, to which they often adhere in heaps, are mentioned among the remedies.

3. *Ascaris lumbricoides*, is most frequently met with in the cœcum and jejunum, but occasionally finds its way into the large intestines and stomach, or creeps into the pancreatic or biliary ducts, and sometimes penetrates through the coats of the intestines into other parts of the body. They occasionally produce the most violent symptoms, or even cause death; and at others, exist in great numbers without being suspected.

4. *Ascaris stephanostoma* fronte bicorne, proboscide acuminibus duodecim obsessa, incisuris corporis quatuordecim, cauda bifida. Habitat in canale intestinali.

5. *Ascaris conosma* papillis in capite obtuso duobus, incisuris corporis decem, cauda simplice. Habitat in canale intestinali.

These two new worms were discharged by the action of calomel from a young man, under the care of Professor Bretschneider, and were examined by Professor Lenz of Jena, and preserved in his collection. They differ very much from all other intestinal worms, and have more the general appearance of larvæ. As they have considerable resemblance to each other, and occurred in the same patient, it is possible that they are the male and female.

6. *Hamularia lymphatica* corpore lineari, teretiusculo, capite obtuso, infra duobus hamulis prominentibus instructo. This filiform worm was discovered by Treutler, in a person who had died of phthisis, in the glands at the division of the trachea and bronchiæ. They were within the lymphatic vessels, adhering

strongly to them by two hooks. The vessels were much enlarged, and their valves destroyed.

Of the tape-worms, he describes only three species, the *tænia solium*, *vulgaris*, and *lata*. We shall say nothing of these at present, as we shall soon have occasion to notice the discoveries of a very promising young naturalist in regard to them.

The next section treats of hydatids. Those described are,

1. *Tænia visceralis*, vesicula simplice inclusa, capitis tuberculis tribus, totidemque corporis articulis, basi vesicæ affixis. This was found by Treutler on the inner slightly inflamed peritonæum of a woman who had died of dropsy.

2. *Tænia muscularis* or *Finna humana*, capsa vaginal icartilaginea, vesicula caudata apicibus obtusis. These are found in the cellular substance among the muscles.

3. *Tænia pyriformis*, capite globoso, proboscide obtusa, papillis sugentibus quatuor multum prominentibus, hamulorum serie duplici, collo tenui, vesica in cauda pyriformi. Fischer found these in 1788, in the choroid plexus of a young man who died of ardent fever, but he knew nothing of his previous history.

4. *Tænia albopunctata*, velamento externo capsulari, capite sessili, papilla suctoria una, una tantum sex hamulorum corona, vesica in cauda rotunda. These were also found in the choroid plexus of a woman 28 years of age, who had become dropsical after an obstinate intermittent, by Treutler. In the last month of her life, she complained of great weight in the right side of the occiput, involuntary flow of tears, and frequent dimness of sight. She slept so soundly, that she was with difficulty awakened. Her hearing and speech daily diminished, and her memory left her entirely. She lost all power of voluntary motion, so that she could neither hold up her head, nor lift an arm or leg. To these were added convulsions and apoplectic attacks. At last she fell suddenly dead, when she seemed to be recovering, and was trying to walk about. The choroid plexus was turgid with blood, and varicose, and contained 14 hydatids on the right side, and two on the left.

5. *Polycephalus hominis*, corona uncorum simplici, capite impefrorato corporibusque pyriformibus. These were discovered by Meckel, in the brain, and the description given by Zeder

from Goeze's posthumous papers. Zeder himself afterwards found them in a girl. The case and dissection are interesting. A young woman, two years before her death, became affected with headache and giddiness. A year and an half afterwards, she recovered in some degree, and lived happily, but too freely for some weeks, until, when on the water, in an oppressively hot day, she was so violently attacked with headache and giddiness, that she fell down senseless. She complained of distention in the forehead, loss of memory and sight, and alternating headache and giddiness. These symptoms increased in violence. She could not bear the least light, or walk erect, but went straight forward, with her body bent, and struck herself against bodies in her way, like sheep affected with the staggers. At last she died and was opened. In the third ventricle, along with water, was found a particular kind of hydatid, containing a fluid resembling a solution of gum. In the passage to the aqueduct of Sylvius, and partly beneath the posterior end of the origin of the left optic nerve, there was a similar hydatid, larger than a hen's egg, to which three smaller ones adhered. In taking it out it burst, and, besides the fluid already described, it contained three other smaller ones. The tentorium cerebelli was also observed to be pushed very much up, and on taking out the cerebellum, there were found, in the fourth ventricle, besides water, several hydatids, which distended it so that it could have contained a hen's egg. In the bottom of this ventricle, on the right side, there was an indurated portion, the size of an almond, of a yellowish colour, and as if covered with matter. From this, other indurations, like catgut, extended in various directions. There were in all twelve hydatids of different sizes, besides half a pint of water.

The fifth section treats of the flat worms Fasciolæ or Ligulæ.

1 *Fasciola hepatica*, ovata plana, Bucholzii. Habitat in vesicula fellea. An original observation of Bucholz of Weimar, in which the gall-bladder was found filled with these worms, confirms the preceding accounts of Bidloo, Bauhin, and Pallas. The last of these authors says, that the bodies in which they occur are always dropsical, their omentum shrivelled, their kidneys unusually small, and their liver very large; the gall-ducts

enormously distended, the bile tasteless, thick and granular, and almost all the intestines beset with hydatids.

2. *Hexathyridium pinguicola*, labio distincto, retractili; capite in fine ostiis sex perforato, cauda curvata; ventre bifurco. The only example of this worm was found by Treutler in the fat of an ovarium.

3. *Hexathyridium venarum*, corpore elongato, depresso, lanceolato; capite labiato, infra poris sex obsito; collo indistincto; dorsi areola ex albo cuerulea; ventre poris duobus dissitis; cauda recta; margine nullo. This insect was extracted, according to Treutler, from a ruptured hole in the anterior tibial vein; but we must confess that we suspect some fallacy in the observation, as there evidently is in all the preceding histories of worms and insects found in the blood.

The infusory animals of the human body we pass altogether over, as having no practical interest.

The *Hirudo sanguisuga* and *H. Medicinalis*, are described as animals which occasionally fasten to the human body. The expedition to Egypt has furnished us with a still more dangerous species, which is swallowed with the water, and fixes on the inside of the œsophagus and stomach.

The worms which penetrate the skin and burrow under it, are the *Gordius aquaticus*, *Filaria Medinensis* and *Furia infernalis*. The first is supposed by our author and others to be a frequent cause of paronychia. To the history of the second, the preceding numbers of this Journal have furnished no inconsiderable addition. The existence of the third is highly problematical. It is doubted, both on account of the singularity of the effects ascribed to it, and the very few instances in which the worm has been discovered. On the contrary, Linnæus and Solander firmly believe they have seen it. The latter expresses himself thus: "Had I not seen the disease with my own eyes, and had the worm in my own hand, I could scarcely have believed what is related of it." The disease ascribed to this insect is a carbuncle or boil, which quickly becomes gangrenous, and terminates fatally, unless the most active remedies be immediately resorted to, or the part be extirpated by the knife, or actual cautery. A disease of this kind is endemic in various countries. It is called in Bothnia, *Skatt* or Shot, in Siberia *Morowaja*

Iasma or plague, in Tartary *Mohmo*, and in Franconia *Flugbrand*, or rapid gangrene. It is ascribed to the action of an external cause, and nominally to the furia infernalis, because it never attacks men or cattle in towns, but only in the fields; because it always commences in those parts of the body which are exposed to the air, in a single point, with an acute pain like the prick of a needle; because in the boil, a red or bluish point is seen like the bite of an insect; and lastly, because the progress of the disease is so easily checked, by destroying or removing the part. Still, however, the innumerable unsuccessful attempts to find any worm in the seat of the disease; the possibility of accounting for the disease independently of its existence; indeed, the similarity of some of its descriptions with a disease of sheep called the sickness in the blood by our Scots shepherds, and the target of some parts of England, and the possibility of mistaking the core or nucleus common in carbuncles for a worm, induce us to differ from our author, and to disbelieve its existence.

Of the remaining sections, containing the histories of singular and incredible cases, we shall say nothing, but refer the curious to the work itself. Upon the whole, we have been much satisfied with these volumes, and with the total want of pretension in their author. As mere compilations, they evince much industry and judgment, but they are frequently enriched with original observations of interest and importance. The plates, in the same manner, consist of good copies from the best originals, with the addition of some figures which have never been before published.

ORIGINAL PAPER.

FOR THE ECLECTIC REPERTORY.

Case of Necrosis.

BY DOCTOR SAMUEL DUFFIELD.

In the night of September 2, 1797, Benjamin Morrell, son of John Morrell, Esq. of Philadelphia, a remarkably healthy child, aged three years and two months, without any previous complaint whatever, was suddenly seized with a violent fever, attended with intense pain in the superior part of the left arm, about two inches below the junction of the os humeri with the scapula.

The morning following, I saw him, and found him labouring under a very high fever. His pulse quick; skin hot and dry; oppressed breathing; and pungent pain in the arm, as before mentioned. On examining the part affected there did not appear any change from a sound and natural state. No swelling, hardness or discolouration whatever; but the pain was intense. He was immediately bled pretty liberally; a purge administered, and warm emollient fomentations constantly applied to the part; and at night had an anodyne with the addition of two grains of calomel. He passed the night badly. The next morning, November 4th, his fever and other symptoms the same as the day preceding. He was bled again; took some cooling purging powders of jalap and nitre; the emollient applications continued; and the anodyne at night without calomel. November 5th, the symptoms exactly as the day before. He was bled a third time; the external applications continued, and he took two grains of calomel again at night with his anodyne as before. November 6th, his fever in no wise abated; his pulse frequent; skin hot and dry, and no abatement of the pain: nor did there yet appear any swelling, hardness, or discolouration of the part affected.

He was now become so weak, that it was not thought adviseable he should lose more blood. The fomentations were continued; but he did not take much medicine afterwards.

He continued nearly in the same state until about the 10th or 11th day of his disease; when, suddenly, a large soft tumor arose on the part where the pain had constantly been, which, on the least pressure, exhibited so great a degree of fluctuation, as to evince that the matter contained was of a much thinner consistence than what usually occurs in common inflammatory abscesses. The tumor continued to increase in size and softness until November 17th, the 14th day of his disease, when it was opened, and discharged about a gill or more of a thin pus, between a straw and yellow colour; and in some parts tinged with blood. From the rapid increase of the tumor after its first appearance, and without the usual inflammatory symptoms of swelling, hardness, or change of colour, added to the appearance of the discharge when opened, I was fully convinced that the disease had arisen from the bone, and that the bone was affected; but he would not *then* permit me to examine it with the probe.

He was now reduced to a very weak state. His fever, though not so great as in the early part of his sickness, still continued. A pain also, apparently rheumatic, seized his left leg, so that he could scarcely move it; from which, with the affected state of his arm, he could lay only on one side. He had, for some time, scarcely taken any medicine, as before mentioned. Bark and elixir of vitriol were prescribed, but he could not be prevailed on to take them in such quantity as to expect much effect from them. After some time he suffered me to introduce a probe, when I found a considerably large surface of the bone bare, and scabrous; but he would not permit me to use the probe so freely as to ascertain how far the disease of the bone extended.

The part was dressed with dry lint, and covered with a plaster of basilicon; and sometimes, when the arm swelled and showed signs of more than usual inflammation, an emollient poultice was applied; and care was taken to keep a pretty tight compress, wet with brandy or vinegar, constantly round the arm above the elbow, with intention to prevent the matter from falling down and injuring that joint, as livid spots appeared on several places of the arm, which afterwards formed into small abscesses.

He continued in this state almost all winter; sweat much at night; was very weak, and had but little appetite: Towards spring, however, he began to recover strength, his fever having greatly abated; and by the month of March, *and not before*, was able to stand on his feet.

This convalescent state increased daily, though not very rapidly; yet to such a degree, that by the beginning of July, he was able, but with some difficulty, to be removed in a carriage with the family near thirty miles to their country residence opposite to Trenton, where they usually passed the summer; consequently I did not see him again until the fall, when the family returned to the city.

It may not be improper to remark here, that when he went into the country in July, notwithstanding I could discover that the disease of the bone had extended considerably downwards, there did not *then* appear to me any reason to suspect that the head of the os humeri, or capsular ligament surrounding it, were affected, which afterwards was found to be the case.

On being informed in November that he had returned to the city, I called to see him, and was not a little surprised to find the head of the os humeri, and full two inches of the bone, standing out, and quite detached from the scapula and fleshy part of the arm; at the same time he could use his hand, and had such a degree of strength in the arm, as to afford reason to believe that nature was about providing a new bone to replace the other, which was now becoming not only useless, but a nuisance, as it prevented him from lying on that side.

His mother had now become his surgeon, and continued the simple dressings of lint and basilicon twice a day as before. Livid spots occasionally appeared along the arm to about two inches above the elbow; and the opening in the flesh gradually increased downwards, the bone becoming more and more loose and prominent until the month of June following (1799) when he went again into the country, where he remained until the fall. Nothing new occurred in his case during the summer. The opening in the arm increased; more of the bone gradually appeared, and he had become quite strong and healthy when he returned to the city in November. In this state, with three or four inches of the os humeri, *including the head complete*, standing out, quite detached from the scapula and fleshy part of the arm, he could nevertheless take up a small chair with that hand (which he called his little hand, it not having grown in proportion quite equal with the other) and carry it about with ease; and would frequently, with a degree of exultation, give his father or brothers a smart side stroke with that elbow, to shew how strong his arm had become. He passed the following winter well, the case gradually progressing; and in June following went again into the country with the family.

Whilst in the country, on the 9th of July, he was seized with a severe fever, which continued until the 12th; when Dr. Belville being called from Trenton to visit him, finding the bone perfectly loose, drew it out without any difficulty; after which the fever soon subsided, and the part healed rapidly, leaving only a deep depression on the eschar which formed on the place from which the diseased bone had been removed.

It is worthy of remark, so rapid was his recovery, that on the 37th day from the extraction of the bone, he rowed a batteau or small boat across the Delaware near Trenton, where the river is about a quarter of a mile wide, *himself*, while his brother sat in the boat with him, but he would not allow him to give him any assistance.

Several members of the College of Physicians can remember how well he could use his arm, when I brought him to their meeting. It has since considerably improved in strength. He can now raise his hand over his head, and put it behind his back with ease, and put on and off his clothes without any inconvenience; and that arm appears to be equally useful with the other, except that he cannot raise the os humeri to an horizontal position quite equal with the other, and it is an inch and an half shorter, being now (in his eighth year, 1801) from his shoulder to the elbow seven inches and an half. The bone which was extracted was full five inches in length; and the sound part which remained connected with the elbow was supposed to be about two inches. He has the use of his elbow complete.

If any useful practical inferences may be deduced from this crude statement of an important case, perhaps a principal one is to guard against being too officious on such occasions, and to trust a good deal to nature. An enterprizing and unskilful surgeon in this case might have enhanced his fame by an amputation, though the patient would have lost his arm by it. I make this remark, as the family were frequently importuned by their friends, to have the arm laid open in an early stage of the complaint; which, had it been done, probably might have prepared the way for the before mentioned operation.

September, 1813.

MEDICAL INTELLIGENCE.

HUMBOLDT'S *Political State of New Spain, and* HUMBOLDT *and* BONPLAND'S *Plantæ Equinoctiales.*

[From the Edinburgh Medical and Surgical Journal, for January, 1812.]

THE arrival of a second volume of the splendid work of these indefatigable travellers, enables us to lay before our readers some curious information respecting the fever which reigns epidemically on the eastern coast of New Spain.

Vera Cruz is considered as the chief seat of the *vomito*, which is certainly the same disease with the yellow fever that has afflicted the inhabitants of the United States of America since 1793. Clavigero and other writers affirm, that it occurred for the first time in 1725; but M. Humboldt is of opinion, that yellow fever has occurred, sporadically, whenever persons born in a cold climate have been exposed, in the torrid zone, to air loaded with *miasmata*. In the sixteenth and seventeenth centuries, the mortality was probably much less than afterwards: 1st, Because the tropical part of America was only visited by the Portuguese and Spaniards, whose constitutions are less hurt by great heat than the inhabitants of more northern countries; 2d, The early colonists of the West Indies were not collected into such populous towns; 3d, Because, after the discovery of the American continent, the Spaniards were less attracted by commerce to the warm and humid shores, and preferred the more temperate elevated plains of the interior. Panama and Nombre de Dios were at first the only ports in which, on certain occasions, there was a considerable concourse of strangers, and, as early as 1535 the former was a dangerous residence for Europeans, and the latter was abandoned in 1584. We must not confound the period when a disease was first described with the date of its first appearance. The most ancient description of yellow fever, is by John Ferreyra de Rosa, a Portuguese physician, who observed the epidemic which prevailed at Olinda in the Brazils from 1687 to 1694, shortly after the Portuguese army had conquered Fernambuco. In 1691 it appeared in Barbadoes, and was called Kendall's fever, but there was no proof of its having been imported from Fernambuco. Ulloa reports, from the information of the natives, that the *vomito prieto* was not known at St. Marthe and Carthagena before 1729-30, or at Guayaquil before 1740.

The black vomit has never yet been observed on the west coast of New Spain. The inhabitants of the sea shore, from the mouth of the Papagallo to Saint Blas, are subject to gastric, which often degenerates into adynamic fever; and it may be stated, that a bilious constitution reigns almost continually in these plains, which, though arid and burning, are intersected by marshes, the resort of the crocodile. The yellow fever, and we request the attention of our readers to the fact, is still unknown even at Acapulco, which Humboldt describes as one of the most unhealthy situations of the New World, where the heat is more oppressive and the air more stagnating than at Vera Cruz; where the inhabitants, for a great part of the year, do not see the sun, except through a stratum of olive-coloured vapour, not affecting the hygrometer; and where heaps of fish putrefying, exhale vapours which are considered as the chief cause of the bilious putrid fevers which reign upon that coast, and which, with cholera morbus, carry off numbers of the Mexicans, who descend from the high table-lands to purchase goods on the arrival of the galleons. So favourable does the situation of Acapulco appear to Humboldt for the development of yellow fever, that he attempts to account for its absence. "Perhaps, if this port, instead of being frequented by ships from Manilla, Guayaquil, and other places of the torrid zone, received ships from Chili and the north-west coast of America; if it were visited at the same time by a greater number of Europeans or of the highland Mexicans, the bilious fever would soon degenerate into yellow fever, and the germ of this last disease would develop itself in a still more fatal manner than at Vera Cruz." Our readers will porbably recollect Dr. Mitchell's theory of *septon*, and his illustration of it, by ascribing the healthiness of all limestone countries to the absorption of the septic acid. Of the falsity of this hypothesis, Gibraltar has furnished an incontrovertible proof, and the great lime-kilns of Acapulco afford another; still, however, such is the political influence of Dr. Mitchell's theory, that on Humboldt's arrival at Philadelphia from the West Indies, the hatchways were gravely painted with lime-water to absorb the *septon* which was supposed to be aboard the vessel;—the poor Spanish sailors, in their ignorance, naturally enough concluded, that it was some magical operation, from which such a disproportionate effect as the destruction of contagion was expected.

From the uniformity of the heat during the year at Acapulco, Humboldt dreads, that if ever the yellow fever is developed there, it will continue during the whole year, as in other situations where the temperature varies only two or three degrees during the year.

It is a mistake that the yellow fever never appears in the southern hemisphere. It, in fact, first attacked a number of Europeans at Olinda, in the Brazils; it prevailed at Guayaquil in 1740; and in the beginning of this century, at Monte Video, so celebrated for the salubrity of its climate. During the last fifty years, the yellow fever has not appeared upon the coast of the Pacific Ocean, except at Panama, and there, as at Callao, the commencement of a great epidemic is often marked by the arrival of some ships from Chili; not that they imported the disease from a country where it never existed, but because its inhabitants, coming from the healthiest country in the world, experience the same fatal effects of a sultry air, loaded with putrid emanations, as the inhabitants of the north.

On the coast of Mexico, an intimate connection is observed between the progress of disease and the temperature of the air. At Vera Cruz there are only two seasons; that of the north-winds, which blow from the autumnal to the vernal equinox, and of the south-east, which blows pretty regularly from March to September. The *vomito* does not commence, generally, till the medium heat is 75° Fahr. and is, therefore, seldom seen in December, January, and February; and although May is warmer than September and October, its ravages are most dreadful in these latter months, because a certain duration seems necessary to develop its full force. Thus, when it has been very violent in summer, it continues more or less during winter; but when it has been mild in summer, it ceases altogether; also, the rain which lasts from June to September, cannot be without influence. The commencement and termination of the rainy season are most to be dreaded.

M. Humboldt is of opinion, that the *vomito* is not *naturally* contagious, but that it is not inconsistent with other pathological phenomena for it to become so, from the influence of climate and seasons, the accumulation of sick, and individual susceptibility. Thus between the tropics, *e. g.* at Vera Cruz, the *vomito* is universally allowed to be *not* contagious; while, in the more temperate climate of Europe, its contagious nature was as indisputably proved, by the escape of individuals in the very focus of the disease, who secluded themselves; and in the intermediate climate of North America, its contagious nature has always been the subject of violent controversy. In tropical situations, a second attack of yellow fever is rare, at Vera Cruz unknown, but in the United States it is not uncommon.

Near Vera Cruz, the *vomito* never occurs higher up than 3080 feet above the level of the sea, which is exactly the limit below which the Mexican oaks cease to grow.

It is remarkable, that persons born and brought up in Vera Cruz, are not *there* subject to the disease. The same is true at Havannah, with regard to its inhabitants; and yet the natives of Havannah are sometimes attacked with yellow fever when they visit Vera Cruz, in August or September; while, on the contrary, natives of Vera Cruz have died of yellow fever at Havannah, Jamaica, and the United States.

It is also remarkable, that the natives of equinoctial countries, such as Vera Cruz and Havannah, are not susceptible of yellow fever in their own country, while, in the more temperate climates of North America, and Old Spain, the natives suffer equally with strangers. The whites and *metis*, who inhabit the elevated interior of Mexico, especially the muleteers and recruits, suffer more from yellow fever than strangers who arrive by sea, probably from experiencing a more sudden change of temperature.

In the most sickly season, the shortest stay in Vera Cruz is sufficient to excite the disease in strangers. Inhabitants of the city of Mexico, going to Europe, generally remain at Xalapa until the very moment of the vessel sailing, set out in the middle of the night, and are carried through Vera Cruz in a litter to the boat waiting for them at the Mole, and yet these often die of yellow fever in a few days; and in like manner Europeans, who, on their arrival, find litters prepared to carry them up to Perote, do not always escape.

At Vera Cruz, the yellow fever generally lasts longer than six or seven days, and deaths in the course of 30 or 40 hours are very rare, whereas in Old Spain, cases have terminated fatally in 6 or 7 hours. The mortality is always greatest, when several ships of war, and many merchant vessels arrive at the same time in summer: thus the cruel epidemic of 1794, followed upon the arrival of three men of war.

Although the *vomito* at first indicates an asthenic diathesis, blood-letting is considered dangerous at Vera Cruz, the passage from synocha to typhus is so rapid. In the commencement of the disease, minoratives, bathing, iced water, sorbets, and other debilitating remedies are preferred; but when, to speak in the language of Brown, whose system, it appears, has excited more enthusiasm in Mexico, that in any part of Europe, the indirect debility manifests itself, the most powerful stimuli are given with great success; such as more than an hundred drops of sulphuric ether, and 60 or 70 drops of laudanum, every hour. Cinchona has not been so successful in Vera Cruz, as in the West Indies snd Spain, and the mercurial treatment, though frequently tried, has been very generally abandoned. Frictions with olive oil have been more successful.

The yellow fever appears at distant but irregular periods. The epidemic of 1762, is the first on record, which, however, does not go back more than half a century. It continued to appear every year until 1775, after which it did not return till 1794, although during all the intermediate years, the concourse of foreign sailors was very great. Since 1794, it has prevailed whenever the north trade-wind ceases to blow. Meteorological observations have, as yet, thrown no light upon these periodical epidemics.

Angustura. Bonplandia trifoliata.

We are always pleased, when the discovery of the source of any articles of the Materia Medica, lessens our ignorance of the instruments of our art. The angustura bark, since its introduction into medicine, has given rise to many false conjectures. It has been ascribed to the brucea ferruginea, which grows in Abyssinia, and to the magnolia glauca, which is not found in any part of South America. Humbolt and Bonpland were lucky enough to meet with it at St. Thomas, in New Guayana, in June 1800. They perceived that it belonged to an undescribed genus; and having sent a specimen of it to Professor Willdenow of Berlin, he described it in the Memoirs of the Berlin Academy for 1802, and named it in honour of its discoverer, Bonplandia; which name has been retained by our travellers in their magnificent work, and may therefore be considered as established. From the *Plantæ Equinoctiales*, Vol. II. p. 59, we quote the following description:

BONPLANDIA. Pentandria monogynia, *Lin.* Ordo naturalis, Quassia, *Juss.*

Character genericus.

(*Willd.* Monogr. in Act. Acad. Berolin. ann. 1802.—p. 24.)

Calyx: perianthium monophyllum, campanulatum, persistens, tomentosum, laciniis ovatis, obtusis. Corolla quinquepetala, tubulosa, petalis lanceolatis, obtusis, coriaceis, extus tomentosis, margine cohærentibus, et corollam monopetalam, pentagonam mentientibus. Nectarium duplex; glandulæ quinque oblongæ, obtusæ; et squamæ totidem truncatæ pubescentes, glandulis dictis cinctæ, ad basim germinis. Stamina: filamenta quinque lineari-lanceolata, basi parum dilatata, infra medium petalorum inserta; antheræ lineares, versatiles. Pistillum: germina quinque coalita; stylus filiformis, staminibus brevior; stigmata quinque oblonga, obtusa, crassa, conniventia. Pericarpium: capsulæ quinque, coalitæ, uniloculares, monospermæ, bivalves. Semen ovatum."

The Bonplandia is a native of South America, and frequent in the woods near Carouy, and Alta Gracia. It grows to the height of from sixty to eighty feet, of an elegant and majestic form. Its trunk is straight and cylindrical. The bark is only one or two lines in thickness, and is sometimes cracked externally. The wood is of a clear yellow colour, dense and susceptible of a polish, like boxwood. The branches are alternate, the lower horizontal, the upper more upright. The bark of the younger branches is of a fine green colour, dotted with greyish tubercles. The leaves are evergreen, alternate, composed of three leafits, one or two feet in length, the middle one being one-sixth longer then the lateral ones, supported on a common foot-stalk ten or eleven inches long. The leaves, when fresh, exhale an extremely agreeable aromatic odour. The corymbus is torminal, about fourteen or eighteen inches long, having a foot-stalk of nearly the same length with that of the leaves, and composed of alternate twigs, bearing each from three to six flowers.

In its botanical character, the Bonplandia approaches most nearly to quassia, but is sufficiectly distinguished by the insertion of its stamina into the petals, and by the petals cohering at their basis, resembling a monopetalous corolla.

The name Angustura bark, is derived from the Spanish denomination *cascarilla* or *corteza del Angostura.* From the very considerable contraction of the Orinoco near Guayana, the town of St. Thomas is vulgarly called *La Angostura*, the straits, and therefore it is not correct to write *Cortex Augusturæ* or *Augustæ*, as has been done, under the false supposition that the bark came from the town of St. Augustin in Florida.

The Bonplandia trifoliata, which has the form of the cacao tree, seems to belong, like the Myristica otoba, Bertholetia and Ceroxylon, to those groups of valuable plants, which nature has confined within a very small extent of country. It is chiefly found to the south of the lower Orinoco, in the missions of Carony, inhabited by the Caribbs, 28 leagues east from Angostura. It is frequent in the fine forests around *Villa de Upatu*, *Alta Gracia*, and *Copapui*, between the rivers Carony and Upatu, but five or six leagues distant from the right bank of the Carony. The bark is an article of commerce at Saint Thomas, Carony, and Trinidad. Bonpland also found it among the plants of the gulf of Santa Fe, between Cumana and New Barcelona.

The Catalonian capuchins who possess the missions of Carony, prepare with great care an extract of angustura bark, which they distribute to the convents of Catalonia.

The Bonplandia is unfortunately indicated on the *tableau* belonging to Humboldt's geography of plants, under the title of *Cusparia Febrifuga*, which has led the London college into a false nomenclature. It must not be confounded with the Cuspa or false cinchona of Cumana, which has alternate leaves.

As giving a general view of the subject of an interesting physiological work, recently translated and now on the point of publication, we insert the following "Extract of the Report made by the Commissioners appointed by the Imperial Institute of France, to review Dr. Le Gallois's Experiments on the Principle of Life, and particularly on the Principle of the Motions of the Heart, and on the Seat of this Principle."

These experiments appear to us completely to establish the inferences drawn by the author, and with which he concludes his memoir; we shall confine ourselves to such of the principal points, as we consider demonstrated.

1. That the principle of the inspiratory motions resides near where the medulla oblongata gives rise to the nerves of the eighth pair.

2. That the principle that animates every part of the body, has its seat in that portion of the spinal marrow, whence the nerves of such part derive their origin.

3. That it is likewise from the spinal marrow, that the heart receives the principle of its life, and of its powers, not from any circumscribed portion, but from the whole of the spinal marrow.

4. That the great sympathetic arises from the spinal marrow, and that the peculiar character of this nerve, is to subject every part to which it is distributed, to the immediate influence of the nervous power.

These results readily solve all the difficulties which have arisen since the days of Haller, respecting the causes of the motions of the heart. It will be recollected that the principal points to be explained, are, 1. Why the heart is supplied with nerves. 2. Why it is subjected to the dominion of the passions. 3. Why it is independent of the will. 4. Why the circulation continues in animals born without heads, and in those that have been decapitated. It will be recollected also that hitherto no explanation has reconciled these points, unless by the aid of hypotheses, which have rather created new difficulties. But now it is readily understood why the heart is supplied with nerves, and why it appears so eminently subjected to the dominion of the passions, since it is animated by the whole of the spinal marrow. It is independent of the will, because the will exercises no control over the organs which are under the influence of the whole of the nervous power. Finally the circulation continues in animals born without heads, and in those that have been decapitated, because the motions of the heart do not depend upon the brain, at least not primarily.

We must remark that this last point, on which Dr. Le Gallois has diffused so much light, presents nothing but confusion and error in the authors of the old and new Hallerian school. No one has distinguished the motions of the heart which take place after decapitation, from those observed after the excision of that organ, or after the destruction of the spinal marrow: They thought that both were equally capable of maintaining the circulation. But there is an essential difference between these motions. The latter have not the power to maintain the circulation; they resemble the feeble motions, which may be excited in other muscles, for some time after death. Dr. Le Gallois designates them by the name of motions from irritability (*mouvemens d'irritabilité*), without attaching any other meaning to the term, than simply to express the phenomena which occur in the dead body (*phenomenes cadavériques*).

On the Solvent Powers of Milk. By Dr. Cassels.

Amongst the various solvents of camphor, and those substances called gum-resins, there is one which I have not found mentioned by any writer on chemistry or the Materia Medica that I am acquainted with, namely, milk. By triturating camphor with milk it is nearly as readily dissolved as with rectified spirit, and this property I apprehend does not altogether depend upon the cream, constituting one of its component parts, for skimmed milk, whey, and the coagulable matter obtained by spontaneous separation, are more or less solvents of camphor. The latter, when dried, and made into a pulp with distilled water, dissolves it in considerable quantity, and forms a beautiful white solution. As the above fact is not generally known, I beg leave to suggest, that it may be of considerable use in performing some pharmaceutical operations, and particularly where economy is an object, as in infirmaries and other charitable institutions; for instance, the emulsio camphorata may be very readily prepared in this manner.

R. Camphor. ʒss.
Lactis vaccini ʒiv. Solve, et adde
Aq. fontanæ ℥viiss.

In this preparation none of the camphor is lost by precipitation. Again, in preparing the tinctura opii camphorata, I have substituted the milk for proof spirit, and find it very useful in coughs, when I think an opiate necessary; nay, it is perhaps a more safe medicine, for the spirit, that forms a principle article in the common paregoric elixir, is more frequently calculated to excite coughing than to remove it.

Farther, when the external application of camphor is wished for, without the addition of alcohol, it may be very easily applied in the following embrocation, which may be called lac camphoratum cum sapone.

R. Camphor. ℥j.
Lactis vaccini ℥iv.
Saponis mollis ℥j. M.

Lastly, cream forms an elegant liniment with camphor, which is not soluble in water.

From this property of milk in dissolving camphor I was led to try its effects on the gum-resins, and found that it dissolved assafœtida, gum ammoniac, guaiacum and myrrh, sooner than water, and I think it a better vehicle for the administration of these remedies, as it not only forms a more perfect solution, but renders their taste less unpleasant. Milk also dissolves rosin and pitch, balsam of Peru and Tolu in small quanties. By the prosecution of these experiments, I have no doubt but some of your ingenious correspondents may be able to throw farther light on the above interesting facts.

Edin. Med. and Sur. Jour.

Solution of Sulphate of Zinc, recommended in Scrofulous Ulcers.

By Dr. Cassils.

Notwithstanding the number of remedies recommended by practical writers for the cure of scrofulous ulcers, unconnected with caries of the bones, it is to be feared, that by far the major part are useless, and that not one is to be entirely depended upon; but after some experience, I beg leave to call the attention of my professional brethren to an external application, which I flatter myself is justly entitled to their confidence, for neither myself, nor those of my friends who are acquainted with it, have ever been disappointed. It is nothing else than a strong, sometimes a saturated solution of the sulphate of zinc in water. I order linen rags to be dipt into as strong a solution as the patient can bear, and applied to the sore, two or three times a-day. If it causes considerable smarting, (which is often the case at first,) I desire the patient to moisten the rag over the part affected with cold water, till the pain is rendered more tolerable, and by degrees to apply the strong solution, as directed, while the disease remains. Sometimes a slight discharge of blood takes place, and at other times a few pimples appear round the margin of the ulcer; but generally speaking, in a few days, an healthy action of all the diseased part takes place, genuine pus is discharged, sound granulations are formed, and in a few weeks cicatrization is completed.

In the worst cases that have come under my care, no internal remedies were administered, so that the whole efficacy of curing scrofulous sores, rests with the strong solution of sulphate of zinc; and I cannot avoid saying, that the above species of ulcer will be no longer considered an opprobium to the healing art. For the knowledge of this invaluable remedy, I am indebted to Mr. Somerville, an excellent surgeon to the General Infirmary, Stafford.

Since I have written the above, I have seen the second edition of Mr. Hey's Practical Surgery, and am happy to add, that my experience of the good effects of this medicine are corroborated by that gentleman. He, indeed, only recommends a weak solution of this metallic salt, viz ℥ss. in a pint of water, to which is added, an ounce of spirit of rosemary, and a dram of spirit of lavender; and, even in that diluted state, it is found to possess very active powers.

Edin. Med. and Sur. Jour.

Mr. J. H. Wishart is preparing for the press, a translation of Scarpa's Treatise on Hernia, from the original Italian.

COLLEGE OF PHYSICIANS OF PHILADELPHIA.

Officers Elected at the Annual Meeting, 1813.

PRESIDENT.

Doctor Adam Kuhn.

VICE-PRESIDENT.

Doctor Thomas Parke.

CENSORS.

Doctor Caspar Wistar.
Samuel P. Griffitts,
William Currie,
Thomas T. Hewson,

TREASURER.

Doctor Thomas C. James.

SECRETARY.

Doctor Joseph Parrish.

UNIVERSITY OF PENNSYLVANIA.

Doctor Benjamin Smith Barton, appointed Professor of the Institutes and Practice of Physic, and of Clinical Medicine, in the place of Doctor Benjamin Rush, deceased.

Doctor Nathaniel Chapman, appointed Professor of Materia Medica, in the place of Doctor Barton.

DIED.

In London, about the middle of May, 1813, Doctor Anthony Fothergill.

Near Philadelphia, Doctor James Proudfit, on the 8th day of August, 1813, aged 43 years.

Alexander Wilson, an eminent Ornithologist, August 22, 1813, at Philadelphia.

Thomas Dobson has in Press,

The Surgical Works of P. I. Desault, Surgeon in Chief of the Great Hospital of Humanity at Paris. By Xavier Bichat, his pupil, and adjunct Physician of the same Hospital. Translated from the original by Edward Darrell Smith, M. D. Professor of Chemistry in the South Carolina College.

Elements of Physiology; by A. Richerand, Professor of the Faculty of Medicine of Paris, Surgeon in Chief of the Hospital of St. Louis, member of the Academy of Vienna, Petersburgh, Madrid, Turin, &c. Translated from the French, by G. J. M. De Lys, M. D. With notes, by N. Chapman, M. D. Professor of the Materia Medica in the University of Pennsylvania. From the fifth edition, revised, corrected, and enlarged.

A Translation of Dr. Swediaur's new work on the Venereal Disease.

Moses Thomas has in Press,

Experiments on the Principle of Life, and particularly on the principle of the motions of the heart, and on the seat of this principle: including the report made to the first class of the institute upon the experiments relative to the motions of the heart. By M. Le Gallois, adjunct member of the Society of the Professors of the Faculty of Medicine of Paris, member of the Philomatic Society, Physician to the Board of Benevolence of the Pantheon-ward. Translated by N. C. and J. G. Nancrede, M. D.

Anthony Finley, Philadelphia; and Bradford and Read, Boston, have in Press,

An Introduction to Physiological and Systematical Botany. By James Edward Smith, M.D. F.R.S. &c. &c. President of the Linnæan Society. First American edition, with such additional illustrations from native plants, as may be necessary to facilitate its application to the Botany of this country. With fifteen engravings.

A. Finley, has just published, An Essay, Medical, Philosophical and Chemical on Drunkenness, and its effects on the Human Body, &c. By Thomas Trotter, M. D. &c. &c.

Kimber and Conrad, and Edward Parker, will shortly publish,

Elements of Surgery for the use of Students, by John Syng Dorsey, M. D. Adjunct Professor of Surgery in the University of Pennsylvania, one of the Surgeons of the Pennsylvania Hospital, &c. 2 vols. octavo.

Benjamin and Thomas Kite, and other booksellers, will shortly publish,

The Principles of Midwifery, including the Diseases of Women and Children; by John Burns, Lecturer on Midwifery, and member of the Faculty of Physicians and Surgeons, Glasgow. The third American from the second London edition, with additions and improvements, by Thomas C. James, M. D. Professor of Midwifery in the University of Pennsylvania.

Kimber and Conrad are preparing to publish,

A second edition of Accum's Chemistry, in two volumes, with notes and additions, by Thomas Cooper, Professor of Chemistry, &c. &c. in Dickenson College, Carlisle.

RECENT FOREIGN PUBLICATIONS.

Botany.

Monograph of the British Jungermanniæ; by W. J. Hooker, No. 10. 4to and folio.

Outlines of Botany, or an easy Introduction to that Science; by Dr. Thornton.

Medicine, Anatomy, &c.

Monro's Outlines of the Anatomy of the Human Body, in its sound and diseased state. 3 vols. and a volume of plates.

The Edinburgh Medical and Surgical Journal, No. 34.

Novum Nosologiæ Methodicæ Systema; auctore F. Swediaur, M. D. 2 vols. 8vo.

Medical Observations and Inquiries, by a Society of Physicians in London. vol. 4, 8vo.

Morbid Anatomy of the Liver, by W. Farre. Part I. Imp. 4to.

Epitome of Modern Surgery, by Samuel Cooper, 8vo.

Observations on the Nature and Cure of Dropsies, by John Blackhall, M. D. 8vo.

Medico-Chirurgical Transactions, published by the Medical and Chirurgical Society of London, vol. 3. 8vo.

A comprehensive View of the Small-pox, Cow-pox, and Chicken-pox, by J. Saunders, M. D.

A Practical Treatise on Hœmoptysis, or Spitting of Blood; showing the safety and efficacy of emetics, and the fatal effects of blood-letting in the treatment of that disease, with cases, by G. Rees, M. D.

An Account of the Plague which raged at Moscow in 1771. Translated from the French, with notes. 8vo.

History of James Mitchell, a boy born blind and deaf, by James Wardrop, F.R.S. Edin.

Practical Treatise on Cataract, by John Stevenson.

Companion to the London Dissector.

A letter on the State and Conditions of Apothecaries, with proposals for making their offices more respectable and more beneficial to the public.

A Grammar of Medicine in all its Branches, for the use of students and youths designed for the medical profession, with plates, questions, &c.

Natural Philosophy.

The Seat of Vision, determined by the Discovery of a new Function in that Organ. By Andrew Horne.

Natural History.

British Ornithology: being the history, with an accurately coloured representation of every known Species of British Birds, &c. &c. by George Graves, F.L.S. vol. 1 and 2, royal octavo.

Natural History of the Quadrupeds, Birds, &c. of Orkney and Shetland, by the Rev. G. Low. 4to.

THE

ECLECTIC REPERTORY

AND

ANALYTICAL REVIEW.

VOL. IV. JANUARY, 1814. No. II.

SELECTED PAPERS.

A Case of Secondary Small Pox, with references to some cases of a similar nature. By T. BATEMAN, M.D. F.L.S. Physician to the Public Dispensary, and to the Fever Institution.

[From the Medico-Chirurgical Transactions, vol. II.]

IT has long been observed by medical practitioners, that, after the constitution has undergone the ordinary influence of small pox, the individual is still liable to be *locally* affected by the variolous poison, whether introduced under the cuticle, by inoculation, or applied in continued contact to the undivided skin. Hence, on the one hand, some inoculators have been in the practice of repeatedly inoculating themselves, and raising a pustule on some part of their own skin, in order to preserve a constant supply of the *virus* for the purposes of their profession; and, on the other, no phenomenon is more common, than an eruption of variolous pustules round the nipples and on the breasts of women, during an attack of small pox in the infants whom they suckle. In some cases, a moderate degree of feverishness and general indisposition is observed to accompany these secondary eruptions. It is, however, almost universally believed, that the constitutional effects of the variolous poison having been once produced, nothing beyond this local influence can result from its application hereafter. But many exceptions to this general truth are recorded, upon undeniable evidence, and might be multiplied, it is probable, were all cases of the kind accurately noted, and none of a questionable nature slurred over or explained away, under the presumption of the impossibility of a second occurrence of small pox. Two instances of this recurrence of the disease have come under our notice, at the Public Dispensary, within the last three years, although small pox rarely claims the attention of physicians in those institutions, unless in a few severe and aggravated cases. The instance which I have now to relate, is of recent occurrence.

Frances Bird, aged twenty-five years, residing at No. 3, Bowl and Pin alley, Chancery lane, nursed with great assiduity an infant, nine months old, during the progress of confluent small pox, of which it died on the 15th day of November, 1809. For two or three days previous to the death of the infant, she felt herself languid and feverish; and on the evening of the 15th she became still more indisposed, complaining of considerable pain in the back, pains about the breast and stomach, thirst, and loss of appetite, which were followed by vomiting. These febrile symptoms continued; and on the 17th an eruption began to appear on the skin.* On Tuesday, the 21st of November (the fifth day of the eruption) she called upon me at home, supported by her mother, and stated the extreme indisposition, under which she laboured, as an apology for not deferring her application until the following day, at the regular hour of attendance at the Dispensary. Her countenance was exceedingly heavy and languid; the eyes were dull, and slightly suffused with redness; the tongue was furred, white, and rather clammy; the pulse frequent and feeble; and the skin hot and dry, with a sensation of soreness and stiffness in it. She complained of great inability of exertion, and of much general uneasiness. There were about fifteen spots on the face, approaching to the pustular character, some of them rather horny and tuberculated, but; others less so, and surrounded by a slightly red circle; two or three of them, indeed, on the left cheek, were surrounded by considerable redness and some hardness and elevation of the skin: there were three or four on the eyelids, accompanied by some redness of the tarsi, especially of the right eye, and two on the side of the nose: there were also several other pustules on the breast, and, as she stated, on the body and thighs, to the number of about fifty.

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* This circumstance is worthy of particular observation. In those instances of the recurrence of small pox in a local degree, which are common in nurses, the feverishness, if any take place, appears *subsequent* to the eruption, of which it is symptomatic: but, in this case, the fever *preceded* the eruption, as in the ordinary progress of the Exanthemata.

This eruption was obviously of a variolous character, and had been so considered by her mother and friends. But the mother expressed her surprize at the occurrence, since she affirmed that the patient had undergone the casual small pox in her infancy, in so severe a degree that her life was then despaired of;—that the medical attendant had called it "the *putrid* small pox;"—and that she had been blind six days: all of which was corroborated by the *numerous pits* with which her face was thickly marked.

At my request, Dr. Willan saw her this day, and confirmed the opinion of the variolous nature of the eruption: he obtained a drawing of the pustules, as they appeared on the face, which he has kindly allowed me to lay before the society.

Wednesday, Nov. 22. (Sixth day.) I visited her, in company with my friend and colleague, Dr. Laird. We found the pustules somewhat increased in elevation, and the redness surrounding them also augmented. The countenance was still dull and heavy, and the eyes rather suffused. The pulse 110; the tongue white, and rather dry; the skin slightly hot; no appetite; some thirst. A laxative, prescribed yesterday, had operated. There were several pustules on the left mamma, four or five immediately surrounding the nipple, the child having been nourished from that breast.

Thursday, Nov. 23. (Seventh day.)—Doctors Laird and Birkbeck visited her with me to-day. The elevation of the pustules is nearly as yesterday; the surrounding redness is almost gone: those about the nipple are beginning to dry. She still complains of being feverish, and without appetite for food; but there is less heaviness, and no redness of the eyes, and much less languor of the countenance. The tongue is still white, but moist: the pulse still quick. On the suggestion of Dr. Birkbeck, one of the pustules was opened, and the fluid found to be purulent. Bowels much relaxed by the diaphoretic mixture, which she has taken.

Friday, Nov. 24. (Eighth day.)—She walked to Dr. Willan's house, in Bloomsbury Square this morning; found herself ill and fatigued after her return, and was lying on the bed when I called upon her. She complained of languor and headache; the pulse was upwards of 100; and the skin rather hot; the tongue as yesterday. The pustules on the face are full, and of a deeper yellow colour; those on the eye-lids somewhat sunk and horny. I armed a lancet from one of those on the cheek.

Saturday, Nov. 25. (Ninth day.)—She is free from indisposition, and the pustules generally are drying, and of a brown colour:—those on the cheek, which were surrounded by the largest areolæ, still contain pus; and one on the neck, and another on the thigh, are large, elevated, and inflamed, assuming the appearance of small boils, and containing a considerable quantity of purulent matter.

Monday, Nov. 27. (Eleventh day.)—All the pustules are dried, and a little accuminated, brown scab is formed upon each of them.

With the lancet, which was charged with *virus* on the eighth day of the eruption, the arm of a young woman was inoculated by Mr. Wachsel, in the Small Pox Hospital; while *virus*, taken from a patient in the hospital, was inserted into the other arm. Full and regular pustules appeared on both arms, at the same time, and went through the same course, no difference between the two being observable. Had the disease of my patient been *chicken pox*, one of the eruptions would have been suspended, until the other had gone through its course.

This case afforded another fact, which must not be omitted to be mentioned. My patient was the mother of three children; one of whom was seven years of age, the other three and a half. Both these had undergone vaccination, at the age of eleven months respectively; i. e. the one six years preceding this occurrence; the other nearly three: and although they both resided in the same apartment, during the progress of the fatal small pox in the infant, they remained altogether free from complaint; the cow-pock having, in this instance, effected a security, which the small pox itself had failed to produce.

The other case, to which I have alluded, occurred under the observation of my colleague, Dr. Laird, in the summer of 1806. Being absent from town at that time, I did not see the patient; and regret that my friend only published the following brief notice of it. His words are these:

"I avail myself of this opportunity to advert to another fact in the history of small pox. The agitation of the vaccine question has, I think, clearly ascertained that one of our medical dogmas admits of some limitation. It has been proved that the same individual may be twice susceptible of the specific operation of the variolous poison. I conceive the following to be a case in point. During the course of last summer, one of my patients at the Public Dispensary, a boy thirteen years of age, had the natural small pox very severely. It was regular in its progress and duration: and yet, when a year old, he had slept in the same bed with his grandmother, while she laboured under this disease, which proved fatal to her; and at that period he was the subject of an eruption, accompanied with fever, and considered not only by his friends, but by a respectable surgeon who attended him, to be genuine small pox."[*]

The importance of attaining to accuracy in regard to the question involved in the preceding history, being, under the present circumstances, extremely great, I may perhaps be allowed to trespass farther on the time of the society, while I notice a few similar facts, which stand on record. To attempt to impugn a doctrine, which is at least as old as the Arabian[†] schools, and has appeared to be confirmed by the experience of every succeeding age, would perhaps be considered as the height of temerity, if not of folly; but when we reflect, that, until a very recent period, the phenomena of diseases of the eruptive class were very imperfectly discriminated,—that down to the time of Diemerbroeck and even later, the small pox and measles were deemed varieties only of the same disease*—that the small pox and chicken pox were not properly distinguished until near the close of the eighteenth century,—and that numerous authors have successively described examples of the recurrence of small pox;†—the attempt might appear to be less extravagant. This very inaccuracy, however, of the older writers renders their description of the recurrence of small pox extremely questionable: and it cannot be doubted, that many of the cases described by them, and others, referred to by Burserius,‡ were instances of chicken pox; and that others, in which the disease has been said to recur five, or seven times,§ or still more frequently, were either altogether fabulous, or that different eruptions were mistaken for small pox. We cannot, at least, put the authority, on which such histories are related, in competition with the testimony of a Dimsdale or a Woodville, who are said to have discredited the recurrence of small pox, except in the *local* form before mentioned.

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[*] See Edin. Medical and Surgical Journal, vol. iii. p. 155.

[†] Even the Arabians admitted that, when the first *fermentation* of small pox did not expel the whole of the *menstrual* humours from the body, subsequent *ebullitions* would take place, and the small pox would occur a second time, sometimes even a third, but very rarely a fourth time. See Diemerbroeck, de Variolis et Morbillis. Cap. iii.

With respect to Dr. Woodville, however, this statement is not correct. Mr. Ring informs us, on the authority of Mr. Ridout, who attended a child, affected by a second attack of small pox, along with Dr. Woodville, that Dr. W. admitted it to be, "the second instance he had seen, in which there could be no doubt of the fact."[*] And Dr. Woodville once stated to me, in answer to a question respecting his experience on this point, that not a year elapsed, in which one or more children were not brought to the Small Pox Hospital, labouring under small pox, but who were said by the parents to have previously gone through the disease. Dr. Woodville admits, too, in his History of Inoculation, (page 217), that a fact, stated by Dr. Deering, of the recurrence of small pox in a boy (a son of Dr. Croft), who had previously suffered the disease in a confluent form, had not been contradicted. Dr. Adams, his successor at the Small Pox Hospital, allows that examples of such recurrence, in our own days, are both numerous and well authenticated.[†]

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* Loc. cit. cap. xiii. De Morbillis. "Differunt a variolis accidentaliter; seu secundùm magis et minus."

† See *Van der Wiel*, Observationes Medico-anatomicæ. Cent. II. 42.—*Hagendorn*, Hist. Medico-physicæ. Cent. II. Obs. 60.—*Journal des Savans*, Tom. XI. p. 417. 1759.—*De Haen*, Rat. Med. P. IX. Cap. VII, &c.—*Diemerbroeck*, loc. cit.—*Forestus*, Lib. VI. Obs. 43, &c.

‡ Institut. Medicinæ, vol. II. p. 157.

§ See *Borelli*, Histor. Medico-physicæ. Cent. III. Obs. 10.—*Paullina*, Observat. Med. Cent. III. Obs. 27.—Ephemerides Natur. Curiosor. Dec. II. Ann. IV. Obs. 29.

Instances of a second infection, communicated, like the case which I have detailed, by nursing patients under the disease, are indeed exceedingly numerous. Mr. Ring has collected, with great industry, a variety of such examples, which appear to be well established both by the circumstances and by respectable authority. In five cases of this sort, females, who had suffered severely from the small pox, when young, received the disease a second time, with considerable constitutional indisposition; in one of them upwards of one hundred pustules appeared; in another three hundred; in a third, ten or twelve; and in a fourth, "an eruption all over the body."[‡] Similar cases are mentioned by other authors.[§]

There are many examples on record, both in our own time, and in the age immediately preceding, when the small pox was well understood, in which decided, severe, and even fatal small pox have been observed a second time in the same individual, from a more casual infection. One of the most striking is the case of Mr. Langford, related in the 4th vol. of the

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[*] See Med. and Phys. Journal, vol. xiv. p. 406.

[†] See Med. and Phys. Journal, vol. xiv. p. 196.—Also, Answers to all Objections against Vaccination.

[‡] See Med. and Phys. Journal, vol. xiv. p. 402:—Vol. xv. p. 434.

[§] Ibid. vol. xii. p. 318. by Hensler, &c. Mr. Moore mentions a lady of his acquaintance, who was infected, in this secondary way, with slight indisposition, six successive times when suckling her children. See his Reply to the Antivaccinists.

Memoirs of the Medical Society of London. This person's countenance was "remarkably pitted and seamed" by a former malignant small pox, "so as to attract the notice of all who saw him;" yet at the age of fifty, he was attacked again with confluent small pox, of which he died; having infected five of the family, one of whom also died.

In the case of Miss Price, published by Dr. Adams, the small pox, produced by inoculation in her infancy, had left some visible marks on the face; yet she lately had a full eruption of distinct casual small pox. She had had the chicken pox when a child.*

A writer in the *Journal des Savans*,† has described a similar recurrence of small pox, in a young woman who was marked by a previous attack of the disease. He was unable to account for it, until he found that she had slept in sheets, used by a child labouring under small pox. The writer seems to have been aware of the "*variole volante*," (doubtless the chicken pox) occasionally occurring after small pox, with a slight fever of twenty-four hours duration.

De Haen relates several instances, in his different works, of the recurrence of small pox; among which are the following.

The daughter of a Florentine nobleman, was inoculated in 1761; but, although the arm exhibited the usual appearances, the pustules on other parts were few, and dried up in a few days; insomuch that the family were doubtful of her security; but their doubts were removed by the opinion of those experienced inoculators, Tozzetti and Condamine. Her brothers, however, were inoculated in 1763, when she received the infection from them, and had a copious eruption of distinct small pox.‡

De Haen likewise relates, that a student of law at Helmstadt, about twenty years of age, took the small pox in the casual way; his face was swelled, and the pustules were numerous, and surrounded by a red circle; a secondary fever took place on the sixth day; the pustules became confluent in a few places, in which pits were left. He went to pursue his studies at Frankfort, where he died, three years afterwards, of the confluent small pox; in which the eruption was very copious, depressed, and no redness surrounded it.*

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* Answers to all Objections, &c. App. II. p. 31.

† Tom. IX. for the year 1759, page 417.

‡ Ratio Medendi, P. IX. Cap. VII.

The same author also describes the cases of the daughter and two sons of Dr. Krapf, Archiater to the archduke Leopold, from his own diary; all of whom appear to have gone through two very decided attacks of small pox, in the spring and summer of the same year.

In another publication† he has detailed other instances, which appear to be equally unequivocal; three of these occurred in a noble family, in Vienna, and were attended by De Haen and Molinari. The circumstances in one of the three are related as follows:

"Filia autem natu major, verno tempore anni 1760, variolas alteras passa est. Testari id possum, cum sæpius illam, una cum Clariss. *Molinari* inviserim. Discretæ quidem multis in locis erant, at quoque in multis cohærentes, confertissimæ adeo, ut in facie, brachiis, cruribus, vix daretur, sine papulis, locus. Gravis utique fuit morbus. Salivatio incepit mox ab eruptione, continuavit ad undecimam morbi diem, adeo copiosa, ut, mensurâ de industria captâ, sesquilibræ vas quotidie expleret; post undecimum vero sensim decrescens, tandem ad decimum quartum cessavit. Hanc autem aliquando imminutam, pectusque ac guttur angustantem, continuatis mane ac sero balneis brachiorum et crurum, potu multo, injectione in fauces, gargarismis, et auctiore imprimis mane ac vespere opio, feliciter semper restituimus, venam secare nondum coacti.

"Igitur hæc nobilissima virgo, quæ ante elapsos duos cum dimidio annos, graves adeo variolas passa erat, nunc iterum et copiosissimas, et molestissimas, et multo diuturnoque ptyalismo sociatas, habuit."

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* Loc. cit.

† Ad Perillust. *B. L. Tralles*, Epistolam Apologit. Responsio, p. 11. See also De Haen's Quæstiones super Methodo Inoculandi Variolas, &c. Likewise *Hagendorn*, Historiæ Medico-physicæ, Cent. II. Obs. 60. and *Sarcone*, Epist. ad Hallerum V. in both of which, instances of a fatal recurrence of small pox are related.

Besides the cases above stated and referred to, numerous others are on record, to which I have not found access: and some treatises have been written expressly upon the subject, which are probably not to be found in this country. Such are *Gerardi*, Ritomo di Vaiuolo, Padua, 1776.—Loeber, Seuschreiben von dem Wieder-kommen der Pocken, &c. Erfurth, 1767.—Medicus et Petit, Deux Lettres sur la rechute de la contagion de la Petite Verole, Manheim, 1767,—which I have not seen.

Enough, however, has probably been stated, to render the occasional recurrence of small pox unquestionable; and at least, to make us pause, before we reject the evidence which may come before us, on the subject; and to lead us to a careful and accurate examination, where appearances, tending to invalidate the received dogmas, occur. It will not, therefore, be necessary to recapitulate the examples adduced, to the number of sixty or seventy, by Mr. Ring,* many of which, although founded upon the testimony of unprofessional persons, are very circumstantially detailed;—nor to quote the authority of Pallas, who, I am informed, mentions that he was detained, when on his travels, by his daughter falling ill of small pox, which she had before suffered;—nor to repeat the statements of the second attack of the disease in the person of Louis XV. of France, in whom a former occurrence from inoculation had been publicly announced;—neither shall I recur to the cases, of which we have only oral evidence, and several of which were mentioned in this society on a former evening. These latter statements receive a higher degree of probability from the well established evidence of the former cases; and the whole cannot but lead us to the opinion, that, upon a close and faithful investigation of facts, it will be found that the small pox occasionally occurs a second time, or oftener, in every degree of severity, from the few local pustules, unaccompanied by constitutional indisposition, which are occasioned by much contact, up to the most general and malignant disease.

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* See his Treatise on Cow Pox, and various numbers of the Medical and Physical Journal, especially in vols. xii. xiv. and xv.

Experiments on the Urine discharged in Diabetes Mellitus, with Remarks on that Disease. By WILLIAM HENRY, M.D. F.R.S. Physician to the Infirmary, Dispensary, and Lunatic Hospital at Manchester.

[From the Medico-Chirurgical Transactions, vol. II.]

IN the analysis of the urine voided in diabetes, a few circumstances appear not to have been determined with the degree of precision which the subject admits, and which it is desirable to attain; though calculated, perhaps, rather to have an influence on the pathology of the disease, than on its medical treatment. In consequence of the recent occurrence of two cases of diabetes mellitus under my own care, and of other opportunities for which I am indebted to my colleagues* in the Manchester Infirmary, I have lately been enabled to examine several specimens of this variety of morbid urine. The results, I am well aware, do not present any facts of great novelty or importance. Yet they may perhaps not be unworthy of being laid before the Society; since they contribute to furnish tests of the existence of the disease, and of the degree in which it is affected by diet or remedies, which are more easily applicable than those hitherto employed. Without entering, therefore, at large into the chemical history of diabetic urine, I shall limit myself to the description of a few of its properties, to which I have particularly directed my attention.

I. *Of the specific gravity of Diabetic Urine, and the proportion of its solid contents.*

The specific gravity of the urine, discharged in diabetes mellitus, has been left unnoticed by some of the best writers on its chemical history, as Cruickshank, Nicolas and Gueudeville, and Thenard. In about ten cases where I have had an opportunity of determining this property, it has never fallen short of 1028 nor exceeded 1040; 1000 parts of water at 60° Fah^{t}. being taken as the standard. This appears to agree very nearly with the experience of the few writers, who have noticed its relative weight, and especially of Dr. Bostock,* Mr. Dalton,† and Dr. Watt.‡ The circumstance of specific gravity I consider as a most useful test of the existence of diabetes in doubtful cases; and, when the disease is unequivocal, taken along with the actual quantity discharged, it furnishes a good criterion of the degree of morbid action. Healthy urine I have never found, even in its most concocted state (viz. when voided on first rising in the morning), and when an average has been taken of that of several different persons, to have a higher specific gravity than 1030. In the course of the day, also, it falls greatly below that number, while the specific gravity of diabetic urine, though subject to a little variation, never changes during the same day, to any thing near the same amount. It may be objected, perhaps, to the employment of this test, that it requires more familiarity with the method of taking specific gravities, than falls to the lot of the greater part of medical practitioners. By means, however, of an hydrometer, which is well known to practical chemists, and which may readily be procured at a small expense, the specific gravity of the urine may be taken, in a few moments, and with the greatest accuracy, by a person wholly unaccustomed to experiments of this kind.§

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* Drs. Ferriar, Bardsley, Holme, and Mitchell.

Respecting the proportion of solid contents, obtainable from diabetic urine, little agreement, as might be expected, is to be found among authors; for besides that the amount actually varies, it must necessarily depend greatly on the degree to which the evaporation is carried. In Captain Meredith's case, described by Mr. Cruickshank,‖ it appears at the maximum, to have constituted rather more than $\frac{1}{12}$ of the urine; Dr. Bostock, in a case which he has related in the Memoirs of the Medical Society of London,* obtained $\frac{1}{9}$ of a thick syrup; Nicolas and Gueudeville $\frac{1}{12}$ of a mass resembling coarse sugar;† and Thenard from $\frac{1}{17}$ to $\frac{1}{30}$.‡ By this process, it will always be found difficult to obtain an exact comparison between the urine of different persons, or of the same patient at different stages of the disease. It appeared to me, therefore, desirable to connect, by a set of careful experiments, the quantity of extractive matter with the more certain character of specific gravity. From such a series of experiments, I have constructed the following table, which exhibits at one view, the quantity of solid matter in diabetic urine of different specific gravities between 1050 and 1020. It will be easy, however, to extend the scale, by the rule of proportion, to any case in which the urine may be found to have a specific gravity above the former, or below the latter, of those two numbers. In the experiments, which furnished the data of the table, the urine was evaporated by a steam heat, till it ceased to lose weight, and till it left an extract, which became quite solid on cooling.

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* Med. Memoirs VI. 241.

† Dr. Bardsley's Med. Reports, p. 161.

‡ Cases of Diabetes, &c. p. 79.

§ The hydrometer best adapted to this purpose is made by Mr. W. Twaddell, of Glasgow. To avoid the inconvenient length of the stem, it is divided into four parts; but it is No. I. only of the series, that is required for determining the specific gravity of urine. To reduce the degrees of this instrument to the common standard, the rule is to multiply by 5 and then to add 1000. Thus, 6° of the hydrometer denote a specific gravity of 1030; for 6 × 5 + 1000 = 1030.

‖ In Rollo on Diabetes, 2d edition, p. 19.

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* Vol. vi. page 240.

† Ann. de Chim. xliv. 59.

‡ Ann. de Chim. lix. 47.

TABLE,

Shewing the quantity of solid extract in diabetic urine of different specific gravities.

Specific Gravity of the Urine.			Quantity of solid extract in a wine pint, in			
In degrees and tenths of Twaddel's Hydrometer.	Compared with 1000 parts of water at 60° F.	Quantity of solid extract in a wine pint, in grains and tenths.	oz.	dr.	scr.	grs.
4.	1020	382.4		6	1	2
4.2	1021	401.6		6	2	1
4.4	1022	420.8		7	0	0
4.6	1023	440.		7	1	0
4.8	1024	459.2		7	1	19
5.	1025	478.4		7	2	18
5.2	1026	497.6	1	0	0	17
5.4	1027	516.8	1	0	1	16
5.6	1028	536.	1	0	2	16
5.8	1029	555.2	1	1	0	15
6.	1030	574.4	1	1	1	14
6.2	1031	593.6	1	1	2	13
6.4	1032	612.8	1	2	0	12
6.6	1033	632.	1	2	1	12
6.8	1034	651.2	1	2	2	11
7.	1035	670.4	1	3	0	10
7.2	1036	689.6	1	3	1	9
7.4	1037	708.8	1	3	2	8
7.6	1038	728.	1	4	0	8
7.8	1039	747.2	1	4	1	7
8.	1040	766.4	1	4	2	6
8.4	1042	804.8	1	5	1	4
8.8	1044	843.2	1	6	0	3
9.2	1046	881.6	1	6	2	1
9.6	1048	920.	1	7	1	0
10.	1050	958.4	1	7	2	18

II. *On the quantity of Urea contained in diabetic urine, with some inferences respecting the pathology of the disease.*

Another circumstance respecting diabetic urine, which has not hitherto been sufficiently determined, is the presence or absence of that substance, the secretion of which is the peculiar office of the kidney, and which gives to healthy urine its characteristic properties. Cruickshank,* Dalton,† Fourcroy,‡ Nicolas and Gueudeville,§ and Thenard,|| have been led to conclude that urea is not contained, in any proportion whatsoever, in diabetic urine. Dr. Bostock, in the paper already quoted,¶ expresses a different opinion; but that able philosopher was afterwards induced, by further experiments, to adopt the general belief of the complete absence of urea.**

The test which has hitherto been employed to decide this point, is the addition of nitric acid to the extract of urine dissolved in a small quantity of water. When urea is present, a copious precipitation is immediately produced of bright pearly scales, resembling very nearly in their appearance the acid of borax. And though this test appears to have been considered as somewhat equivocal, from its affording a crystallized substance by its action on sugar, as well as on urea,†† yet a little attention will obviate all uncertainty from this source. The change effected by nitric acid on urea, takes place at common temperatures; and, when it does not happen immediately, is entirely prevented by heating the mixture, in consequence of the decomposition of a part of the acid by the urea, and the formation of volatile alkali, which unites with the undecomposed acid and forms nitrate of ammonia. On the other hand, crystals of oxalic acid are never produced, until after the application of a high temperature. The shape of these crystals also is strikingly different from that of the crystals of nitrate of urea; the latter being readily discriminated, by their flat scaly form and pearly lustre, from the crystals of oxalic acid, even when the figure of the latter is modified, as sometimes happens by the presence of other substances. In some cases, where doubts appear to have existed as to the nature of the product resulting from the action of nitric acid on the extract of urine, I suspect that it has been a mixture of oxalic acid and nitrate of ammonia, both of which have probably been generated, in consequence of the urine having contained urea as well as sugar; a combination not unusual in the less perfect forms of the disease.

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* Rollo on Diabetes *passim*. † Bardsley's Med. Reports, p. 161.
‡ Système des Connais. Chim. 4to v. 480. § Ann. de Chim. XLIV. 69.
|| Ann. de Chim. LIX. 48. ¶ p. 260. ** Bardsley's Reports, p. 174.
†† Bostock in Med. Mem. VI. 251.

In decided cases of diabetes mellitus, it has invariably happened, within my own experience as well as that of other persons, that the nitric acid, applied to the extract of the urine, has failed to give any indications of the presence of urea. There appeared to me, however, reason to suspect that the action of that acid on the urea might possibly be prevented, by its agency on the greater proportional mass of sugar. To determine this point, nitric acid was added to artificial mixtures of the extract from diabetic and natural urine,* with the following results.

Extract from 1 measure diabetic with 1 of natural urine.	The whole presently rendered solid by the abundant precipitation of nitrate of urea.
Do. from 2 measures diabetic to 1 natural urine.	In the course of a few minutes, a copious precipitation of scales.
Do. from 4 measures diabetic to 1 natural urine.	No immediate precipitation; but it commenced in half an hour and gradually increased.
Do. from 6 diabetic to 1 natural urine.	A very sparing precipitate of pearly scales, but not till after 24 hours.
Do. from 8 diabetic to 1 natural urine.	No scales in forty-eight hours.

From these experiments, it may be inferred that urea can no longer be made apparent by nitric acid, in the extract from any mixture of diabetic and natural urine, when the former exceeds the latter in a greater proportion than that of six to one; or, as nearly as I can estimate from other experiments, when the solid urea is less than $\frac{1}{30}$th of the weight of the mixed extract. There is one property however of this substance, originally pointed out by Fourcroy and Vauquelin, which enables us to detect urea, even when present in such minute quantities, as to escape discovery by the nitric acid. Amidst the great variety of animal products, this appears to be the only one which is decomposed, when in a state of solution, by the temperature of boiling water. At this low degree of heat, its elements, held together by a balance of affinities which is easily disturbed, arrange themselves in a new order; ammonia and carbonic acid are generated; and carbonate of ammonia is composed, equivalent in weight to about two thirds that of the urea.* It is in the fluid, therefore, condensed during the evaporation of diabetic urine, that we are to look for traces of the existence of urea; and in this fluid I have invariably found a sufficient quantity of carbonate of ammonia to restore the colour of reddened litmus paper, and to precipitate muriate of lime. When the distillation is carried so far, as to reduce the residuum to charcoal, the last products are strongly acid, in consequence of the production of the pyromucous acid from the decomposed sugar. Even in these latter products, however, a portion of ammonia exists, and may be obtained in a separate form, by first saturating the liquid with pure potash, and then submittting it to a second distillation. The condensed fluid will invariably be found to contain volatile alkali, though often, it must be acknowledged, in very minute quantity. It is on the ammonia, which comes over *early* in the distillation of diabetic urine, that I am disposed chiefly to insist, as establishing the presence of urea; because we are unacquainted with any other animal substance, which can give origin to the volatile alkali under such circumstances.

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* The diabetic urine was that of S. Brookes, whose case was described by Dr. Ferriar in his Medical Histories and Reflections, 2d edit. I. 135. It had the specific gravity 1033. The natural urine was the portion first voided in the morning by a man in strong health, and had the specific gravity 1019.

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* Healthy urine, it is well known, is acid when first voided, and reddens vegetable blue colours; owing, as Thenard asserts, (Ann. de Chim. LIX. 270) to its containing acetic acid. After being heated, however, for a short time, the liquor becomes alkaline, in consequence of the production of ammonia. When fresh made urine is distilled, carbonate of ammonia comes over, though in small proportions, till almost the whole of the fluid is evaporated. It is then produced in great quantity, and lines the neck of the retort and the receiver with a solid incrustation. The quantity of carbonate of ammonia which I have thus obtained from a wine gallon of fresh and concocted urine, has varied from two to three ounces. Its production may chiefly be referred to the urea, which is equally decomposed by heat and by putrefaction. I have been informed, indeed, by persons who distil urine for manufacturing purposes, that little, if any, increase of volatile alkali is gained by previously allowing the urine to become putrid.

Another proof of the existence of some portion of urea in diabetic urine, may, in many instances, be obtained by a careful observation of the phenomena attending its spontaneous decomposition. At a temperature of 60° Fah^t. diabetic urine passes rapidly to the acetous state. But if the succession of changes be carefully watched, it will be found that there is a point at which, before it becomes acid, it exhibits, to sufficiently delicate tests, distinctly alkaline properties.

In the account of these experiments, I have not thought it necessary to state the proportion of urea in the fluid submitted to them, because the ingredients of the urine, whether in a healthy or a morbid condition, will scarcely ever be found to have the same proportion to each other. The deficiency of urea in diabetes, however, may be stated as being very considerable. In those cases where I have attempted to estimate it, from the quantity of ammonia evolved by the destructive distillation of the urine, the urea has not appeared to exceed from $\frac{1}{40}$ to $\frac{1}{60}$ the quantity contained in an equal measure of concocted healthy urine. One specimen of diabetic extract, with which I was favoured by Dr. Bardsley, approached so nearly to perfect whiteness, that there appeared to me little reason to expect any evidence of its containing urea. Yet, even in the product of the distillation of this extract, after being rectified with the addition of potash, ammonia was found. On distilling, also, a portion of the urine itself, the condensed liquor gave manifest traces of carbonate of ammonia. This urine, however, contained a far less proportion of urea than I had ever before ascertained; not exceeding, as nearly as I could estimate, $\frac{1}{80}$ of the natural quantity. Making every allowance, then, on account of the increased flow of urine, it will appear that the quantity of urea discharged by persons labouring under diabetes, in any diurnal interval, falls considerably short of the quantity voided in a state of health.

In the examination of diabetic urine, when the disease has not been completely formed, it has occurred to me to find, along with saccharine matter, sufficient urea to give a distinct precipitation on adding nitric acid to the dissolved extract. This is a state of the urine, also, which is often produced by the exclusive use of animal diet. In such cases, I have endeavoured to determine the proportions of the urea and saccharine matter to each other, by the following process: a portion of the extract was first decomposed by destructive distillation; and the product then redistilled with the addition of carbonate of potash. The condensed liquid was next saturated by diluted sulphuric acid of known specific gravity; and from the quantity of this acid, which was required, I inferred that of the solid ammoniacal carbonate, every two parts of which were assumed to indicate three of urea. This process I believe to be much more accurate than the treatment of such a mixed extract with nitric acid; because nitrate of ammonia will be formed, and will be mixed with the crystals of oxalic acid, thus rendering their apparent greater than their real quantity. The precision, however, which is attainable in this way, can only be required in experiments of research. For all practical purposes, the use of the hydrometer, and the application of the test of nitric acid to the extract, will afford a sufficient measure of the degree, in which the urine deviates from the healthy standard.

Two hypotheses have been framed to account for the principal phenomena of diabetes. According to the one, the seat of the disease is solely in the organs of assimilation. But it has been satisfactorily proved, that saccharine matter does not exist ready formed in the serum of diabetic blood.* Until, therefore, it can be shewn that there is a direct communication between the digestive organs and the kidneys or bladder, capable of conveying sugar from the former to the latter without its passing through the general circulation, the theory must be modified by assuming that the blood, which reaches the kidneys, contains *the elements* of sugar, and is deficient in those of urea. To this theory, however, which takes for granted the healthy state of the kidneys, it may be urged as an objection, that it supposes those glands to have a natural tendency to secrete sugar, whenever its elements are presented to them. But this is a point which can scarcely be conceded; for besides that the secretion of urea is known to go on under the exclusive use of vegetable food, such a function in the kidneys would be inconsistent with that wise adaptation of parts, which devotes every organ to some specific purpose essential to the healthy state of the animal economy. It appears therefore to be necessary to a just pathology of the disease, that some morbid condition of the kidneys should be admitted, though of a kind which has not yet been explained by anatomical investigation.

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* Nicolas and Gueudeville, Ann. de Ch. XLIV. 69. Dr. Wollaston Phil. Mag. XXXVII. 79; and my own experiments, the result of which is stated in Dr. Ferriar's Medical Histories, 2d edit. i. 146. The same conclusion is established also, by experiments which I have very lately made.

At the same time, it is probable that the assimilatory organs are, also, disordered; for the kidneys, though their function is perverted,* so as to render them instruments for forming sugar, still retain in part, their power of producing urea, when they are furnished with fit materials. This may be deduced from the known influence of animal diet, in diminishing the quantity of urine in diabetes, and in restoring to it that peculiar substance which characterizes healthy urine. In the cases which have fallen under my own treatment, as well as in those which have been shown to me by my medical friends, these have been almost invariable consequences.† But it has not always followed, with equal certainty, as might have been expected from the testimony of some writers, that the disease in such instances has been cured. In the first case which I had an opportunity of treating, the urine in eight days was reduced from 14 or 16 pints in the 24 hours to 6 pints. Its specific gravity, at the close of that interval, remained the same; but the extract afforded an abundant scaly precipitate with nitric acid. Notwithstanding this change, the strength of the patient, already reduced to an extreme degree by the duration of the disease, sunk so rapidly that I acquiesced in his wish to return home to a distant part of the country, and to die in the midst of his own family. In this case (and similar ones, I believe, are not uncommon*) the kidneys must have regained much of their healthy action, while the general disease remained unsubdued. It should appear, therefore, that neither derangement of the organs of assimilation, nor morbid action of the kidneys, is of itself sufficient to account for the disease: and that both causes are probably concerned in its production†.

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* Dr. Rollo, in his valuable work on Diabetes, (p. 418. 427.) expresses an opinion that the kidneys are merely *separating but not secreting* organs, adapted to remove excrementitious or unassimilated matter from the system. They appear to me, however, to partake of the office of secretion equally with every other gland in the body; for there is as marked a difference between urea and any of the proximate principles of the blood, as between the latter fluid and the bile, or any other secreted substance.

† One exception only has occurred to me, which I have stated in Dr. Ferriar's Med. Hist. i. 144.

III. *Of the remaining ingredients of diabetic urine.*

With regard to the action of chemical tests on diabetic urine, and to the nature and proportion of the *saline substances* which it contains, I have nothing to add to the accurate reports, which have already been given by Nicolas and Gueudeville, and by Dr. Bostock. With their experiments my own for the most part coincide, and tend to establish the conclusion, that the different salts exist in diabetic urine, almost in the same proportion to each other as in the healthy state, but that they fall considerably short of the same absolute quantity.

The nature and amount of the *primary animal fluids* (as they have been termed by Dr. Bostock) which are contained in diabetic urine, can scarcely, I apprehend, be determined, till we are in possession of tests, which, while they act as precipitants of those fluids, shall have no agency on saline substances. In the present state of this branch of animal chemistry, it unfortunately happens that all the tests, with which we are acquainted, afford nothing more than equivocal appearances, when applied to the urine. Acetate of lead for example, is not only precipitated by animal mucus, but by the muriatic and phosphoric salts, which abound in that fluid.

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* See in particular, Dr. Lubbock's valuable essay in the 5th vol. of the London Medical and Physical Journal.

† An opportunity has lately occurred to me of trying the plan of treatment in diabetes, which has been recommended, with so strong a body of evidence in its favour, by Dr. Watt of Glasgow. The patient (a female aged 34) had laboured under the disease more than twelve months, and was then voiding from 12 to 18 pints of urine daily, which had the specific gravity, 1037, and gave no traces of urea, except by distillation. Though she was much emaciated, yet her muscular strength did not appear to me to be so far diminished as to forbid the practice of bloodletting. Between the 28th of December and the 14th of January, she was bled four times, to the extent of twelve or fourteen ounces each time. She was put also, on a gentle course of mercury, which after some time slightly affected the mouth; and she was laid under no particular restriction as to diet. I did not find, however, that the smallest impression was made either upon the state of the symptoms, the quantity of urine, or its chemical composition; and I, therefore, discontinued the practice. From a solitary case of so hopeless a disease as diabetes, it would be unfair to deduce a condemnation of this or any other plan of treatment.

It has been disputed whether the *saccharine matter*, existing in diabetic urine, be identical or not with vegetable sugar. According to Cruickshank,* both substances, if due allowance be made for the saline ingredients of diabetic extract, yield, by the action of nitric acid, very nearly the same proportion of crystals of oxalic acid. Nicolas and Gueudeville and Thenard have obtained, also, by the fermentation of diabetic extract, very nearly the same weight of alcohol, as would result from an equal weight of vegetable sugar†. These circumstances appear to me to be decisive, with respect to the close similarity between the two substances. On the other hand, it has been asserted, that the saccharine matter of diabetic urine cannot, like vegetable sugar, be brought to assume a crystallized form. The absence of this property, however, is not invariable; for I have had an opportunity of observing distinct crystals of sugar, in a portion of diabetic syrup long exposed to the atmosphere. A mouldy scum formed on its surface, which was repeatedly removed and reproduced. In this way much of the animalized matter was doubtless separated; and the residuary syrup afforded regular crystals by spontaneous evaporation. Some slight difference may possibly exist between animal and vegetable sugar, but one depending on those minute differences in the proportion of elements, or in their mode of combination, which cannot be appreciated, till the analysis of the products of organized bodies has attained far greater refinement and accuracy, than belong to it in its present state.

Manchester, Feb. 1811.

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* Rollo on Diabetes, 2d. edit. p. 429.

† Ann. de Chim. XLIV. & LIX.

[TRANSLATED FOR THE ECLECTIC REPERTORY.]

Memoir on the influence of the Temperature of the Air on the chemical phenomena of Respiration. Read at the Institute, May 11, 1812, by Mr. DELAROCHE.

[From the Journal de Physique, de Chimie et d'Histoire Naturelle.]

ABOUT two years ago, I had the honour to read to the class, a memoir, on the power possessed by animals, of producing cold when exposed to a high degree of heat. After having shown, that this power depends solely on the evaporation of the matter of perspiration, whether from the lungs or skin, I remarked, that notwithstanding the suppression of this evaporation, the excess of temperature of the animals over that of the surrounding air was trifling, when the temperature of the air rose to thirty-five or forty degrees of centegrad. therm., pointing out the fact as a difficulty in the chemical theory of animal heat. We cannot perceive at the first glance, why, when every known cause of refrigeration has ceased, the heat disengaged by respiration should not raise the temperature of the animals as much above that of the surrounding air, whether the latter be high or low. With the view of determining the nature of the doubts which this, and analogous facts already published, might oppose to the theory of animal heat, it is necessary to determine whether the chemical phenomena of respiration are as obvious in high as in low temperatures. Moreover, after the discussion of this subject, when my memoir was read before the assembly, some of the learned characters then present, and particularly Mr. Laplace invited me to investigate the subject. Mr. Berthollet, with his habitual kindness, offered me every assistance in the inquiries, which I immediately undertook. The results which I then obtained, I mean now to lay before the class. This was not done earlier, because I proposed to subjoin them to a work I had begun on animal heat, and its proximate cause; a work, which a variety of circumstances have prevented my continuing, at least for the present.

These inquiries are not entirely new. Crawford has published, in his work on animal heat, a few experiments made on Guinea pigs, when it would appear, that the absorption of oxygen diminishes rapidly in proportion as the temperature of the external air rises; but these experiments are not sufficiently numerous, nor conducted with sufficient care to command confidence.

Spallanzani has proved, by a great number of experiments, that in cold-blooded animals, the activity of the chemical phenomena of respiration increases with the temperature of the surrounding air. To the best of my knowledge, he did not extend his inquiries to warm-blooded animals, though he appears to have been of opinion, that the same occurred in these as in cold-blooded animals.

In 1806, I published the result of some experiments on this subject, made in conjunction with my friend Dr. Berger; from which I inferred, that if heat exerts any influence on the activity of the chemical phenomena of respiration, it is, sometimes to increase, and sometimes to diminish it;—but, not being satisfied as to their accuracy, and not having repeated them often enough, I shall merely describe them without drawing any decided conclusions.

The experiments, of which I am going to offer the results,* were made by placing the animals, whose respiration I wished to examine, in the manometers lent me by Mr. Berthollet; and by examining the alteration which the air contained in these instruments had undergone, after the animals had continued in it a longer or shorter time. It is unnecessary to give a particular description of the manometers, a very clear one having been given by Mr. Berthollet, in the first volume of the Memoirs of the Society of Arcueil. It will be sufficient to state, that they are wide-mouthed glass jars, closed hermetically by a brass plate screwed on. This plate has two openings, one for the passage of a barometer; in the other, a stop cock is fixed, by which a portion of the air may be drawn off, being replaced by an equal volume of water. This operation may be repeated at pleasure, during any period of the experiment. A thermometer hung in the center of the manometer indicates the temperature of the contained gas, and the elevation of the mercury in the barometer gives the degree of pressure to which this gas is subjected. By these means we can ascertain, with great ease, if the quantity of gas has varied during the experiment.

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* The first were made at Arcueil, in the presence and with the assistance of M. Bernard. As they were not so accurate as those I afterwards made, I shall not give the results.

In all the experiments made on warm blooded animals, I employed the same manometer Mr. Berthollet used in those of the same kind, which he published in the second volume of the Memoirs of the Society of Arcueil, the receiver of which was a glass globe, containing 28 litres. The capacity of that I used for frogs did not exceed 1.36 litre. I placed these manometers in a cool room, and having allowed them time to acquire the temperature of the surrounding atmosphere, I introduced the animals, whose respiration I wished to examine, and inclosed them, leaving the cock open. Two minutes after, I also closed the cock, at the same time noting the height of the mercury in the thermometer and barometer. I left them in this state for about an hour; at the end of which time, (having again examined the height of the mercury in the barometer and thermometer), I drew off and analyzed a portion of the gas.* I then withdrew the animal, which had not remained long enough to suffer from the alteration of the gas. The next day, or the day after, I repeated the experiment, placing the manometer in a stove-room, more or less heated, allowing the animal to remain the same length of time.† By these comparative experiments, which I repeated on a great number of animals, I could easily determine the influence which external heat exerted on the chemical phenomena of respiration. The results will be found in the following table.

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* In this analysis I employed the eudiometer of Volta.

I separated the carbonic acid by repeated washings with lime water.

† I have frequently inverted the order of the experiments, beginning with those made in the stove-room.

Number of the Experiments.	Name of the Animals.	Duration of the experiment expressed in minutes.	Temperature of the manometer during the experiment.	Quantity of gas remaining at the end of the experiment, when reduced to its original temperature and pressure.	Analysis of the gas.			Oxygen absorbed.	Oxygen absorbed, reduced to the pressure of 76 centim. of mercury, to the heat of melting ice, and to extreme dryness.	Carbonic acid produced, reduced to the pressure of 76 centim. of mercury to the heat of melting ice, and to extreme dryness.
					Azote.	Oxygen.	Carbonic acid.			
1	Rabbit . .	60′	14,3 28,2	0,9923 1,0029	0,7991 0,8031	0,1516 0,1544	0,0415 0,0415	0,0584 0,0544	0,0539 0,0464	0,0383 0,0355
2	Rabbit . .	65,5	11,9 37,4	0,9904 0,9896	0,7931 0,7917	0,1459 0,1448	0,0514 0,0541	0,0641 0,0652	0,0596 0,0536	0,0478 0,0437
3	Rabbit . .	58,5	11,1 26,6	0,9988 1,0000	0,8015 0,7950	0,1505 0,1515	0,0488 0,0535	0,0595 0,0585	0,0565 0,0513	0,0463 0,0469
4	Rabbit . .	70,3	11,0 27,8	0,9963 0,9869	0,8039 0,7924	0,1369 0,1413	0,0555 0,0522	0,0731 0,0687	0,0670 0,0592	0,0509 0,0450
5	2 Guin. pigs	68,5	14,0 26,0	0,9938 0,9986	0,7989 0,7984	0,1536 0,1565	0,0413 0,0437	0,0564 0,0535	0,0519 0,0462	0,0380 0,0385
6	2 Guin. pigs	60,	10,7 35,5	0,9944 1,0000	0,8043 0,7974	0,1547 0,1876	0,0354 0,0450	0,0553 0,0542	0,0513 0,0431	0,0330 0,0371
7	2 Guin. pigs	76,5	11,4 35,4	0,9944 0,9915	0,7979 0,7982	0,1392 0,1403	0,0573 0,0530	0,0708 0,0697	0,0654 0,0570	0,0529 0,0433
8	2 Guin. pigs	54,5	4,2 41,1	0,9928 1,0076	0,8040 0,8069	0,1374 0,1546	0,0514 0,0462	0,0726 0,0554	0,0707 0,0485	0,0501 0,0372
9	Cat	63,0	10,3 32,7	0, 861 1,0077	0,8039 0,8101	0,1511 0,1622	0,0311 0,0354	0,0589 0,0478	0,0557 0,0391	0,0289 0,0289
10	Cat	65,0	11,4 30,0	0,9931 0,9905	0,8016 0,7956	0,1435 0,1521	0,0480 0,0429	0,0665 0,0579	0,0606 0,0493	0,0437 0,0355
11	Pidgeon . .	88,	12,5 24,8	0,9951 0,9958	0,7882 0,7952	0,1794 0,1831	0,0276 0,0175	0,0305 0,0269	0,0283 0,0236	0,0256 0,0151
12	Pidgeon . .	129,3	8,7 26,0	0,9957 0,9923	0,8020 0,7950	0,1622 0,1620	0,0315 0,0353	0,0478 0,0480	0,0444 0,0406	0,292 0,299
13	Pidgeon . .	96,	8,7 28,2	1,0000 0,9935	0,7927 0,7889	0,1772 0,1737	0,0301 0,0309	0,0328 0,0363	0,0307 0,0308	0,0285 0,0262
14	Pidgeon . .	93,5	2,8 38,2	0,9938 0,9945	0,8046 0,7924	0,1587 0,1739	0,0205 0,0282	0,0413 0,0361	0,0409 0,0295	0,203 0,230
15	9 Frogs . .	201,0	6,3 27,4	1,0044 0,9800	0,8180 0,8282	0,1727 0,0482	0,0137 0,1036	0,0373 0,1618	0,0363 0,0425	0,0131 0,0912
16	9 Frogs . .	150,	7,6 26,8	0,9822 0,9890	0,7899 0,8188	0,1692 0,1297	0,0231 0,0401	0,0408 0,0803	0,0390 0,0703	0,0221 0,0353

I need not enter into an explanation of the four first columns in this table. I will, however, remark, that though I have supposed the time that the animal remained in the manometer, to have been the same in all the comparative experiments; yet, there was always a very slight difference, but this has been obviated in the calculation; the effects produced in one case being reduced to what would have occurred if the time had been precisely the same with the duration of the first part of the experiments.

The fifth column indicates the quantities of gas remaining at the close of the experiment, reduced to the volume they would have occupied, if the state of the barometer and thermometer had not varied, but remained the same as in the first instance. I have assumed, as an unit, the quantity of gas contained in the manometer in the first instance.

The sixth, seventh and eighth columns indicate the quantities of each elementary gas contained in the manometer, being fractions of that unit; in the ninth are expressed the quantities of oxygen absorbed.

The principal object of these experiments being to ascertain the comparative quantities of oxygen absorbed, and carbonic acid produced, by animals confined in the manometer, it was necessary, in the different experiments, to reduce them to a common unit; which was done by taking as such the whole quantity of each gas the manometer could have contained, if filled when the mercury in the barometer stood at 76 centimeters, at the temperature of melting ice, and the gases previously dried. The eighth and ninth columns contain the quantities thus reduced.*

I shall now point out the principal conclusions to be drawn from the results exhibited in the foregoing table.

If they are considered distinctly and independent of any comparison with each other, they will be found to agree pretty nearly with those experiments made by Mr. Berthollet, already referred to. There was, for the most part, a slight diminution of the volume of air contained in the manometer. It is true, that this diminution was not uniform, and generally, in proportion to the duration of the experiment, much smaller than was observed by Mr. Berthollet; but this may be easily explained from the manner in which my experiments were conducted. For, instead of determining the height of the thermometer placed in the center of the manometer at the time I introduced the animal, I allowed an interval of two minutes, that the thermometer might acquire the temperature of the gas contained in the manometer.

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* In the note at the end of the Memoir is introduced an example of the calculation of the numbers as contained in this table.

In every instance there was less carbonic acid produced than oxygen absorbed. Whence I have supposed, with Mr. Berthollet, that there was a production of azote; but there may be some error as regards this, for the analysis of the gas being confined to the portions contained in the top of the manometer, might not indicate the real proportion of carbonic acid.

If a comparison be made between the results of the experiments made on the same animal under similar circumstances, but at a different temperature, it will be seen, that in almost all the experiments made on warm-blooded animals, the quantity of oxygen absorbed, after making allowance for the reduction of the gas to the same temperature, has been rather greater in a low than an elevated temperature. This difference, however, has been very small; and in three experiments, entirely wanting, or rather the order inverted. But this is not the case if the numbers are corrected by a reference to the state of the thermometer and barometer. The difference observed between the results, when the animal was exposed to an elevated temperature, and in those when exposed to a low temperature, become more considerable. It is wanting only in one experiment, and appears, in general, to be greater in proportion as the difference of temperature is increased. It, however, has never exceeded one third of the oxygen absorbed, in low temperatures. Taking, on the one hand, all the experiments made in warm temperatures, and on the other those made in a cold, which gives a mean difference of temperature of 21 centrg. we obtain for the mean quantity of oxygen absorbed in the first case, 0,04415, and for that absorbed in the second, 0,05265. The quantities are nearly as five to six, and their difference appears much less than might have been expected, from the different quantities of heat produced by the animal in the two cases, at least if we form our judgment from the excess of temperature of the animal over that of the surrounding air.

The difference between the quantities of carbonic acid formed at different temperatures is still less considerable. It is almost nothing, if we take the mean numbers when allowances have not been made for the temperature and pressure. When these reductions are made, it is about one tenth, one mean being 0,0347, the other 0,0382. I must, however, observe, that I have less confidence in the results relating to the carbonic acid produced, than in those relating to the oxygen absorbed, as I was unable to repeat the analyses affording the proportion of this gas; whereas I repeated two or three times those which gave the proportion of oxygen; and, as I believed, as mentioned above, that the carbonic acid might be in less proportion in the top than the bottom of the apparatus, and that the temperature might have some influence in this unequal separation.

It may be supposed, that these experiments do not afford us an exact idea of what naturally takes place, and that the transition from cold to heat was too sudden for the animal to accommodate the process of respiration to the new situation in which it was placed. Possibly, if it had remained longer in the warm air, it would have exhibited a more striking diminution in the activity of the chemical phenomena of respiration. Some experiments which I have since made, all tending to show that this supposition is to a certain degree well founded, have inclined me to think, that in no instance, a difference of fifteen or twenty degrees in the temperature of the surrounding air produces any remarkable difference in the activity of the phenomena in cold-blooded animals. But these experiments are too imperfect to be offered here, or to warrant any positive conclusions from them.

It would certainly be interesting to extend these inquiries, delicate indeed beyond what we should at first imagine. Especially to determine, at the same time, if the whole production of animal heat corresponded to the variations in the quantities of oxygen absorbed, and of the carbonic acid produced during their respiration; which would require an attention to the portion of heat lost by the evaporation of the perspirable fluid. This appears to me the only way of determining if we can, what a great number of physiologists have considered as a solid objection, the uniform temperature of animals exposed to continual variations both in the nature and temperature of the surrounding medium. These inquiries would not be easily accomplished. I have attempted several, and though I discovered a mode of determining, pretty accurately, the total quantity of heat produced in a given time, by animals exposed to different degrees of heat, I must acknowledge, that I have been deterred by the difficulties of the work; but I cannot refrain from expressing the wish, that others more fortunate, and more patient than myself, will engage in this undertaking.

From the experiments of which I have just given the results, I do not think that we can draw any positive conclusions respecting the cause of animal heat; and I have not offered them with this view, but solely as establishing, in a manner which appears to me certain, that the elevation of the temperature of the surrounding air, far from increasing the activity of the chemical phenomena of respiration in warm-blooded animals, produces a marked, though not very considerable diminution.* If we bear in mind, that the same cause produces a great acceleration in the inspiratory and expiratory motions, we shall conclude, that there exists no necessary connexion between the frequency of these motions and the chemical phenomena of respiration.

Spallanzani has proved, as stated above, that a contrary effect occurs in cold-blooded animals. His experiments being exceedingly numerous, I have not deemed it necessary to make a great many. I chose rather to confine myself to some made on frogs. Their results, conformably to those obtained by Spallanzani, prove, that heat increases in a remarkable degree the activity of respiration in these animals, both as regards the chemical and mechanical phenomena. The quantity of oxygen absorbed, when the frogs were exposed to a heat of 27°, was in one experiment double, in another quadruple to what occurred when the temperature did not exceed six or seven degrees. This forms another difference, distinguishing warm-blooded animals, and those that do not hibernate, from the cold-blooded.

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* This at first appears at variance with a curious fact first observed by Crawford, which I have also verified, viz. that the venous blood of warm-blooded animals acquires a vermilion colour, and most of the characters of arterial blood; but on fuller reflection, it will be seen, that this fact only proves that the alteration which the blood undergoes in its passage through the capillary vessels, forming the communication between the two systems, is less when the animals are exposed to a very hot than to a cold atmosphere.

NOTE.

To give an idea of the manner in which I calculated the numbers which express the results of my experiments, I will point out the one adopted for the first part of my first experiment.

	h.	m.	s.
The rabbit was placed in the manometer at	11	20	0
The cock was closed at - - -	11	22	5
I collected the air respired at - - -	12	20	0

Consequently the air had served for the respiration of this animal during 60′, as it cannot be supposed that the air was sensibly renewed while the cock was open.

The thermometer stood at 13,2 when the experiment was begun, The barometer in the manometer stood 0^{m} 7503.

The volume of gas contained in the manometer at the close of the experiment, was the same as at the beginning, but the pressure and temperature were different. To reduce it to the state it would have been in if the pressure and temperature had not varied, I used the following formula, in which A expresses the volume which a quantity of gas, saturated with moisture, would occupy under the pressure p, and at a temperature t degrees above the melting of ice. A′ expresses the volume which it would occupy under the pressure p', at a temperature t'.

$$A' = \frac{A\left[p - \left(\begin{array}{c}\text{expansion of aq. vap.}\\ \text{at temperat. } t.\end{array}\right)\right] \times [\,1 + t'\,0{,}00375\,]}{\left[p' - \left(\begin{array}{c}\text{expansion of aq. vap.}\\ \text{at temperat. } t'\end{array}\right)\right] \times [\,1 + t\,0{,}00375\,]}$$

This formula supposes the air inclosed in the manometer was in an extreme state of humidity, which cannot be far from the truth; for the precaution taken to renew the air before each experiment, by filling the manometer with water, then emptying without wiping it, caused a quantity of water to remain on the sides of the vessel, sufficient to saturate the air it contained.

Applying this formula to the case in question, taking as an unit the quantity A, gives A'09923, consequently the volume of gas contained in the manometer at the commencement of the experiment being also taken as an unit, the actual diminution of gas equals 0,0077.

The analysis of the gas in the manometer gave for every 100 parts,

Carbonic acid,	0,0419
Oxygen,	0,1528
Azote,	0,8053
	1,0000

The entire volume of gas, at the end of the experiment, being equal, after reducing it to the original pressure and temperature, to 0,9923, consequently the volumes of each of the constituent elements when corrected, were

Of Carbonic acid,	0,0416
Oxygen,	0,1516
Azote,	0,7991
	0,9923

At the beginning of the experiment, there were

Of Oxygen,	0,21
Azote,	0,79
	1,00

Consequently there was a production of 0,0091 of azote, and of 0,0416 of carbonic acid, and an absorption of 0,0584 of oxygen.

The same formula served for reducing the volumes of oxygen absorbed and of carbonic acid produced, supposing them in the state of extreme dryness, at the heat of melting ice, and under a pressure of 76 centimeters of mercury. Accordingly for A then presented, the volume of carbonic acid produced under a pressure of 0,7474, and at the same temperature of 13°,2 being 0,0416, p $0^m,7474$ t was 13°,2, p' was $0^m,76'$, t' was reduced to nought, the aqueous vapour possessing no expansive force at this temperature.* I thus obtained 0,0383 for A', or the volume which the gas produced, when reduced to the state of extreme dryness, would have occupied under a pressure of $0^m,76$ of mercury, and at the temperature of melting ice. The same correction was applied to the oxygen absorbed.

On the Cauliflower Excrescence from the Os Uteri; and Case of a Collection of Pus in the Cavity of an unimpregnated Uterus. By JOHN CLARKE, M. D.†

[From the Medical and Physical Journal, for July, 1812.]

THE object of the present communication is to give some account of a disease not hitherto described, as far as I know, by any writer on the diseases of the female organs of generation, or in any book on Morbid Anatomy, though it is far from being uncommon. From its external form and structure in the living body, I have for many years been accustomed to describe it, in my lectures, under the name of the cauliflower excrescence of the os uteri, meaning to distinguish it from other diseases of structure of this part of the body, but especially from cancer, with which disease it has generally been confounded.

Having been for many years much consulted about the diseases of the female sex, I have been led to observe, that there is a great variety in the symptoms of diseases, which pass under the common name of cancer. On accurately investigating, by examinations in the living body, the structure of different diseased parts, and connecting this with the variety in their symptoms; and particularly observing in the disease, which is the subject of this paper, the absence of many symptoms which characterise cancer, and some other diseases of the uterus, I consider myself justified in giving to it a new name, which is in some degree descriptive of its structure.

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* The expansive power of aqueous vapour at the temperature of melting ice is so very small, that, in calculations of this kind, it may be assumed as nothing, without any sensible error.

† Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge, 1812.

It appears to me to be of great importance to distinguish, by different names, diseases which have some symptoms in common; otherwise, a confusion in name will lead to confusion in practice, and to the use of the same remedies in disorders very different from one another. If, in some cases, advantage has been received by the patient; in others, much mischief has been done. Error has been propagated, and improvement in practice could not reasonably be expected.

I cannot omit this occasion of observing, that the treatment of diseases of the uterus, upon the mere description of symptoms given by a patient, without any examination of the parts, or upon the examination and representation of persons not conversant with the healthy or diseased structure of them, is not likely to be productive of advantage to the patient, or to add to the stock of knowledge heretofore acquired. No person should prescribe for these diseases without examining himself, and every medical man ought to be competent to make such an examination, otherwise he will be likely to do much mischief.

Having very frequently met with the cauliflower excrescence of the os uteri, I was much surprized that I could find no specimen of it in any collection of anatomical preparations. I sought for it in vain in the collection of the late Dr. William Hunter. There is no specimen of it in the collection made by Mr. John Hunter, now in the possession of the college of surgeons; and in all my inquiries, among those who had the best opportunities of finding it in the dead body, I have never been able to procure a specimen, which I could add to my private collection, for the purpose of exhibiting it in my lectures. The reason of this will be satisfactorily explained by two cases, which will be related in this paper.

The cauliflower excrescence arises always from some part of the os uteri. As several of the early symptoms are not very distressing to the patient, the tumour in the beginning is rarely the subject of medical attention; the first changes of structure have therefore not been observed. I do not recollect that I have ever met with a case, in which the size of the tumour was less than that of a blackbird's egg. At this period it makes an irregular projection, and has a base as broad as any other part of it, attached to some part of the os uteri. The surface has a granulated feel; considerable pressure, or handling it, does not occasion any sense of pain. The remainder of the os uteri will, at this period, be found to have no sensible alteration of structure. By degrees, more and more of the circle of the os uteri, and the external part of the cervix uteri, become affected with the same morbid alteration of structure, till at length the whole is involved in the disease.

The growth is in some cases slow, but in others rapid, so that, in the course of nine months, it will sometimes entirely fill up the cavity of the pelvis, and block up the entrance of the vagina.*

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* I learned this fact from the following case. I was consulted by a young woman, about twenty-six years of age, who was suffering under a profuse uterine discharge, the appearance of which led me to believe, that it proceeded from this disease. I was confirmed in this opinion, by finding the whole pelvis filled with a cauliflower excrescence so large, as to impede the free passage of the fæces and urine. She appeared to be sinking fast under the quantity of the discharge. No statement was made to me of the probability of her being pregnant.

As she did not reside in London, I saw her only a few times. About six weeks after my first visit to her, she was suddenly seized with pain in the abdomen, which increasing in violence, a medical man in the village where she lived was sent for. Upon making an examination, he discovered a large tumour projecting from the orifice of the vagina. Having left the room for a short time, he was hastily recalled, and on returning he found, that the head of a child protuded. Soon after, the child was born, and in a short time the placenta came away. No unusual discharge following, it was supposed by those present, that no disease existed. However, in a short time, when the puerperal discharge had lessened, all the former symptoms returned, and I was again desired to visit her. On examination, I found the excrescence filling up the pelvis as before. The discharge from it became daily more profuse, and in six weeks after delivery she died, in a state of the greatest emaciation.

From the history of this case, I am led to believe, that the disease must have been formed after conception, both because she had no symptoms of disease nine months before her delivery, and because, in the state of the

As the bulk of the tumour increases, the granulated structure becomes more evident, and is found to resemble very much the structure of a cauliflower, when it begins to run to seed. In most cases, it is of a brittle consistence, so that small parts of it will come away, if it be touched too rudely, and such pieces appear to be very white. Sometimes, though no violence has been used, small portions of a white substance come away with the urine of the patient, and in the discharge from the vagina.

When the tumour has arrived at a size greater than that of the os uteri, it spreads very much, and as the base is the smallest part of the tumour, persons, not conversant with the disease, have often mistaken it for polypus. A little attention, however, to the feel of the tumour, and the breadth of its base, will be sufficient to distinguish them.

In the very early state of the cauliflower excrescence, a discharge from the vagina takes place like fluor albus. It very soon becomes thick and watery, and is sometimes tinged with blood. In most cases, upon coming away, it is apparently as thin and transparent as pure water; but the linen, on which it is received, when dry, becomes stiff, as if it had been starched. The quantity of the discharge, when the excrescence is large, will sometimes be sufficient to wet thoroughly ten or twelve napkins in a day. Now and then a discharge of pure blood occurs. When this ceases, the discharge of a thin transparent fluid re-appears. An offensive odour generally accompanies the discharge, which is greatest when there has lately been an evacuation of pure blood, or of the catamenia.

Through the whole course of the disease, I have never found, in any instance, any appearance of pus in the fluid discharged from the vagina. Sometimes, however, mucus will be seen in it.

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os uteri, attendant on this disease, it is not likely that conception should take place.

It appears that, when she fell into labour, the tumour was expelled, before the os uteri could be dilated for the passage of the child's head, and before it could pass through the pelvis. As soon as it was born, the tumour receded into the vagina, and no further examination was made at that time.

The catamenia are affected in an early state of this disease. This discharge is, however, generally more abundant than in health, and the period is apt to last longer. With the catamenial secretion, blood is very often effused. When the constitution becomes much weakened, menstruation is less regular, and, in the last stages of the disease, it observes no regular period.

Patients, labouring under this disorder, are variously affected with regard to pain. In the commencement none is felt; but during its progress, pain is in some cases experienced. Generally, in the advanced stage, the patient feels pain in the back, and in the direction of the round ligaments of the uterus. The pain is not described to be lancinating, as in cancer, and is without any sensible aggravation by paroxysms; but on the whole, it is most felt after the patient has been long in a perpendicular attitude.

The disease attacks indiscriminately women of all ages. I have lately met with a case, in which it proved fatal before the age of twenty-five years. The patient is destroyed by the debility occasioned by the profuse discharge; and, in the course of the disease, she always becomes extremely emaciated. That this depends entirely on the discharge, will appear from the consequences of the treatment pursued in a case hereafter described. I have never met with an instance, in which the disease did not terminate fatally. As it seemed quite evident, that the diminution of bodily strength in this disease is owing to the discharge, I had for many years wished for an opportunity of removing the excrescence by a ligature, to ascertain whether relief might be obtained by this operation; believing, from the insensibility of the tumour, that it would not increase the danger of the patient. At length, a favourable case presented itself about three years ago. At that time I was called upon to visit a patient, who was supposed to have a polypus of the uterus. She had been very much weakened by a continual discharge from the vagina before I saw her, and was apparently sinking very fast. On examination, I discovered that there was a cauliflower excrescence of the size of an orange, growing from about one third of the circle of the os uteri. The uterus above the tumour was enlarged.

It was agreed in a consultation, in a case so hopeless, to attempt the extirpation of the tumour by a ligature, which might be instantly loosened, if any pain or other inconvenience should be produced by it. I accordingly passed a ligature round the base of it, as near to the os uteri as possible. The patient was not sensible of any pain upon tightening the threads. I therefore left her, with directions to send for me, if she should be in pain; but I heard nothing from her. On the following day, finding the threads slackened, I tightened them. Still no pain was occasioned, but I found that the watery discharge had ceased altogether, and that a thicker had succeeded, which was small in quantity, and very offensive. On the next day the ligature came away, proving that the tumour was divided at its base. I immediately examined the cavity of the vagina, but found no tumour there, and from the most strict inquiry, ascertained that nothing had passed from the vagina. I again examined the vagina with great accuracy, and found a small portion of a white, glary substance, which might have been contained in half of the shell of a pigeon's egg. From this time she had no more watery discharge, and in a few weeks, from having been much emaciated, she regained a considerable degree of plumpness. After this, however, a purulent discharge occurred from the vagina. I saw her again, and found that the lower portion of the uterus was become diseased. The os uteri was irregular and knotted, and the interstices of the knobs were in a state of ulceration. To this state symptoms of irritation succeeded, and she died. The body was not examined after death.

I have since had an opportunity of inspecting, after death, the uterus of a patient affected with the same disease, whom I had attended for many months. A few days before her death, the cauliflower excrescence was examined by my brother, Mr. Clarke, and it was then as large as an orange. She had suffered very much from a profuse discharge of watery fluid, and towards the conclusion of her life, a symptom occurred, which I never before met with, a loss of sight, without any apparent alteration in the structure of the eye. On examining the os uteri, the day after death, no tumour appeared; and it was clearly ascertained, that nothing solid had come away during her life. The body and fundus of the uterus were sound. From about half of the os uteri, hung a slimy, flaccid, white, and very tender substance, resembling the fœtal portion of the placenta of a graminivorous animal. It was desirable to ascertain, whether it could be artificially filled by injection, so as to restore its former size. The attempt was accordingly made; but it failed, from the injection escaping from every part.

On considering and comparing these two cases, it appears to me, that the application of a ligature in one case, and the death of the patient in the other, produced the same effect; that is, the supplies were cut off, and the vessels, which had before contained the fluids, collapsed, and almost disappeared. If all cases of cauliflower excrescence are of the same structure, which, from the similarity of the discharge, there is reason to believe, the disease consists in the growth of a præternatural substance from the os uteri, which, when touched, feels like a solid substance, but when emptied of its contents collapses, so as to occupy but a small space.*

In this paper I have taken no notice of the symptoms arising from mechanical pressure, because they are common to this disease, and all other tumours of the same magnitude, occupying the same situation.

Respecting the treatment of this disease, I can offer at present, little satisfactory information. The disease being described, and distinguished from others, is something gained. All stimulating substances, either in diet or medicine, seem to aggravate it, by increasing the discharge; and no astringents internally given, which I have tried, appear to lessen it.

The only means, from which I have seen any benefit derived, is the injecting into the vagina, three times a day, a strong decoction of cortex granati, or of cortex quercûs, in which alum is dissolved, in the proportion of eight or ten grains to every ounce of it. This has the double effect of lessening the quantity of the discharge, and rendering it less offensive.

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* I consider that the circumstances which took place in the case where the ligature was applied, and the appearances on the inspection of the parts in the dead body, afford a satisfactory explanation, why this disease is not found, as a tumour, in collections of morbid anatomy, and why it has not been described by any writer upon that subject. No account of it is to be found in the valuable work of Dr. Baillie upon Morbid Anatomy.

It is scarcely necessary to add, that the use of anodynes must be resorted to for the mitigation of pain, and that the occasional symptoms of suppression of urine, and costiveness, are to be relieved by the use of a catheter and mild laxatives.

P. S. Since the foregoing paper was laid before the society, a case of cauliflower excrescence, connected with pregnancy, has occurred in the practice of my brother, Mr. Clarke.

Margaret Pole, aged thirty-two years, the mother of eight children, discovered that she was pregnant in the beginning of the year 1810. From the commencement to the termination of her pregnancy, she had a constant discharge from the vagina, generally watery, but sometimes bloody, by which she was extremely debilitated. On the 1st of July she was taken with labour pains. The practitioner, who was first called to her, finding a large tumour in the vagina, in his opinion resembling the placenta, and the discharge being at this time very profuse, my brother was called to his assistance. When he arrived, he found the patient perpetually vomiting, and having a pulse, quick, frequent, and weak. On examining the tumour, he ascertained its structure to be that of the cauliflower excrescence. At this time, the os uteri was not much dilated, but the discharge of watery fluid tinged with blood was very great.

Early in the morning of the 3d of July, she was delivered, without the assistance of art, of a putrid child, and the placenta followed in the usual time.

On the 4th and 5th of July, a great quantity of discoloured watery fluid came away; her belly became tender upon pressure, and much swollen. On the 6th, aphthæ appeared on the palate, tongue, and inside of the cheeks. The vomiting had never ceased; she became gradually weaker, and died on the 7th of July.

On examining the state of the parts after death, my brother found, by slitting up the vagina, that the tumour had disappeared, though in the patient's life-time it had filled nearly the whole of its cavity. In its place was a pulpy, unresisting substance, very little firmer than mucus.

An attempt was made to fill the tumour, from the vessels of the uterus, with fine injection, but the injected fluid always escaped from the vessels of the pulpy mass. The vessels, of which this species of tumour appears to consist, are of a very tender texture, and soon become too putrid to bear the force necessary to be employed, in attempting to fill them with injection.

From the resemblance between this case, and one described in the paper to which this is annexed, there is every reason to believe, that the disease must have begun, in this case also, after the commencement of pregnancy.

Case of a Collection of Pus in the Cavity of an unimpregnated Uterus.

On the 12th of January, 1812, I visited Mrs. A. B., about sixty-five years of age, who had ceased to menstruate for many years. A few weeks before I saw her, she had informed Mr. Brande, who attended her, of her having a small sanguineous discharge from the pudenda. The discharge was not attended by any pain, but, as she was rather heated, he gave her occasionally some sulphate of magnesia in infusion of roses, from which she considered that she experienced relief. After this, she had, as she informed me, a discharge, at first like fluor albus, and small, but which afterwards became of a brownish colour, offensive to the smell, and greater in quantity. A very short time before I saw her, she had experienced a more considerable sanguineous discharge, but without any pain.

She readily agreed to an examination per vaginam. I found the os uteri rugged, and much harder than usual. The cervix was of the common length, but was hard to the touch. From the upper part of the cervix, a tumour bulged out in all directions, so as to occupy nearly the whole space from the os pubis to the os sacrum. She was of a spare habit of body, but this was natural to her. Her tongue was not foul, and there was nothing remarkable in her pulse. There was no unnatural heat of her skin; she had not been attacked by any shivering; and she passed her fæces and urine as in health. To the time of my first seeing her, she had frequently walked in the open air, and had pursued at home her accustomed occupations; and afterwards, even to the day on which she died, she walked about her house, without pain or inconvenience.

Considering all the symptoms, and the patient's time of life, a favourable termination of the case was not to be expected. Only such measures, therefore, were adopted, as were calculated to remove the irritation arising from the discharge.

As there were no urgent symptoms in the case requiring constant attendance, I saw her occasionally only. On my second visit, which was on the 29th of January, she described her situation as being more comfortable; the discharge was diminished in quantity, and was become less offensive, and less irritating.

Early on the 31st of January, she sent in haste to Mr. Brande. When he arrived, she told him, that, after passing a very good night, upon waking, she was suddenly seized with violent pain in the lower part of the abdomen, and a sensation, as if something had suddenly given way there, and that she was still in great pain. She had passed her urine at four in the morning; after the attack of pain, however, she could pass no more, but had a frequent desire, attended with uneasiness, to empty the bladder. She was now in a state of extreme weakness and faintness, like a person nearly expiring, having a small thread-like pulse, great paleness of the surface of the body, and coldness of the extremities. Mr. Brande directly administered some cordial remedies, from the effect of which her pulse was improved, and she recovered, in a considerable degree, from the state of faintness, in which he had found her. In the middle of the day I saw her, and drew off from the bladder about half a pint of urine of a natural colour; after which she said that she felt more easy. Her pulse at this time was frequent, but not very feeble; her voice was strong, and her faculties entire. Her arms, which lay out of bed, were cold, but her legs and feet were warm; in the face she was paler than I had seen her before.

After I left her, she gradually became weaker, and in the evening of that day she died, having preserved the faculties of her mind nearly to the last.

Before she died, she desired that her body might be examined. The examination was accordingly made on the 2d of February.

On opening the abdomen, about seven or eight ounces of a most offensive purulent fluid were found in its cavity. When this was cleared away, the part of the small intestines which presented itself, showed very strong marks of preceding inflammation, and their different folds were connected by coagulable lymph, which appeared to have been lately effused. There were also some adhesions, which had been of longer standing. The extremity of the broad ligament of the uterus on the right side was pretty firmly connected to the peritonæum, in such a manner, that the lower part of the small intestine, in going to the head of the colon, passed under the fallopian tube, so that a strangulation of the gut might have taken place at that part.

On raising the intestines to expose the contents of the pelvis, a tumour appeared, in a gangrenous state, with an opening in the upper part of it, through which, on the slightest pressure, a quantity of offensive pus issued, similar to that which was found in the cavity of the abdomen. The bag containing it appeared to be in contact with the quantity, which still remained in it, probably about five ounces.

This matter being removed, the bag was discovered to be the uterus in a distended state. Both its external and internal surfaces were of a very dark colour, exhibiting nearly the appearance of a mortified part. On the internal surface there was an appearance like half coagulated lymph, but there were no traces of any cyst, so that the fluid was contained in the uterus itself. The internal surface of the uterus had a honeycomb-like appearance. The orifice between the cavity and the cervix was closely contracted, so as not to have allowed the contents of the uterus to be discharged through it.

The circumstances worthy of observation in this case are;

1. That so much inflammation should have existed in the cavity of the abdomen, as to have firmly connected the ex-

tremity of the broad ligament to the peritonæum opposite to it, and that a very active state of inflammation of the intestines should have more recently occurred, with effusion of coagulating lymph, so as to connect the convolutions of them to each other, without either having been attended with pain.

2. That so large a quantity of purulent matter should have been formed in the cavity of the uterus, (that found in the abdomen having evidently proceeded from the uterus) amounting to twelve ounces at least, without any preceding marks of the presence of inflammation.

3. That, as there was no cyst in the cavity of the uterus, the contraction of the cervix should have been sufficient to prevent the exit of the fluid, as the cervix was readily pervious to a probe after death.

4. That the uterus, which in many cases of disease, as in common inflammation of its substance, in that species of inflammatory action which takes place in painful menstruation, in scirrhus and in cancer, is so very susceptible of pain, should have suffered so much mischief and derangement of structure without giving the slightest sensation of pain.

5. That, as the fluid escaped, the uterus contracted, so as to apply itself to the remaining contents.

6. That, as there was no communication between the cavity of the uterus and the vagina, the sanguineous and other discharges must have taken place from the cervix and os uteri, and the vagina.

Some Remarks on the Fevers of Sicily; with an account of the Autumnal, or Bilious Remittent Fever of that Island, as it appears among the British troops. By ALEXANDER BOYLE, A. M. Surgeon to the 62d Regiment of foot.—Communicated by N. BRUCE, Esq. Surgeon to the Forces.

[From the Edinburgh Medical and Surgical Journal, for April 1812.]

THE febrile diseases, which usually prevail among the British troops in the island of Sicily, are not of great variety; and those which demand most attention, and which most frequently occur, are the invariable attendants of summer, or of the early part of autumn: while those to which the soldier is exposed at other seasons, differ not, in any important or essential symptom, from the same diseases, as they commonly appear in more temperate and northern latitudes.

In all climates, indeed, diseases of this class have certain symptoms in common, which constitute their permanent character, and establish a certain affinity among the whole. In those of Sicily, this affinity becomes still closer, inasmuch as they all may be ranked among the diseases of increased excitement. Local inflammation seems to be always present; and is, in general, sufficiently manifested by the appearance of some external affection, or the lesion of some important function.

In organs, however, which display a wide sympathy with other parts of the system; whose functions are various, or intimately connected with the phenomena of life; it becomes extremely difficult to analyse, (if I may use that expression), the changes and appearances frequently produced by local inflammation of those parts; and, except such symptoms as are common to the whole of the *Pyrexiæ*, it often happens, that no peculiar or distinctive sign is to be observed. Such, indeed, is the mutual relation and dependence established between certain organs, that, when invaded by inflammation, the generic characters of the disease, or those depending on the lesion of the natural function of the part, necessarily become obscure, and are only to be detected by the careful and diligent observation of facts. The assistance afforded by anatomy, therefore, is not to be neglected. It opens the most authentic sources of information, and displays a wide view of the causes of diseases proceeding from disordered structure, or peculiar arrangement of parts, and thereby enables us to arrive at the explanation of some of their most important phenomena. The road to truth, however, it must be acknowledged, is intricate; and it is only by slow and difficult steps that we can arrive at general conclusions. "Medicinam cito discere, non est possibile, propterea quod impossibile est statam, et certam doctrinam in ipsa fieri." *Hipp. de locis in homine.* In a great number of cases, however, such as acute rheumatism, pneumonia, as also in many of the profluvia, which are closely allied to inflammation,* the seat of the disease is made sufficiently apparent, by certain obvious and unequivocal symptoms, depending on the peculiar structure and office of the organ concerned, which constitute their distinctive and generic signs.

It is universally allowed, that the more general symptoms of pyrexiæ, or those in which they all agree, are permanently uniform; and their similitude, in this respect, it is presumed, may depend on the similarity of their proximate cause. In the above examples, this is easy of detection; and, in the febrile diseases of this country, it will be found to consist in an increased vascular action, or determination to some particular part, produced by the application of specific causes, aided by certain circumstances of constitution or mode of life, affecting the general habit.

In a former communication,† concerning the febrile affection which prevails during the torrid months of summer, those causes were partly explained, the chief of which is found to be the direct action of a powerful and vertical sun. That other causes may also contribute to produce this disease, it is not my intention to deny; as, like all inflammatory diseases, a predisposition will no doubt be formed by whatever tends to produce a plethoric state of the vascular system, whether referable to diet, exercise, or the suppression of the natural or accustomed evacuations and secretions. These, however, are to be regarded solely, as *occasional causes*, which equally favour the operation of a variety of other powers *directly* applied, which are distinguished by the appellation of exciting causes, and whose mode of application and action, as in the present instance, determines the seat of the disease.

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* Cullen's Synopsis—Order *Profluvia.*

† Edin. Med. Journal for October 1810.

It may in this place be observed, that, during the winter also, fevers occur in which the head is sometimes affected; but, in such cases, it is seldom a primary disease, this affection only supervening in consequence of metastasis, and appearing as a symptom attending violent attacks of other diseases caused by checked perspiration and vicissitudes of temperature; as pneumonia, catarrh, acute rheumatism, and the like. In a certain epidemic inflammation of the lungs, mentioned by Morgagni, its appearance was very common, and more recovered in whom this symptom was observed. Morgagni, Epist. 7. Art. 12.

To the disease of summer I assigned the title of Cephalitis. To ascertain, however, by any train of symptoms, what particular part of the encephalon is more especially affected, it must be readily allowed, implies a degree of discrimination, at least, not easily to be attained; and it is even doubted by some, whether the road to this discovery could be much facilitated by dissection.*

It is supposed by Galen, that the pulse affords some information on this subject, and that when the cerebellum is affected, it becomes weak, undulating and tremulous. This is undoubtedly an alarming symptom, and invariably indicates extensive derangement of the structure of the brain. Such, however, is the connection throughout the system of vessels distributed on this organ, that, in whatever part the inflammation does begin, it will, no doubt, speedily affect the energy of the whole.

It is nevertheless certain, that the effects of simple inflammation are very different from those of mere compression, whether it proceed from effusion, or from vascular congestion; and it is equally true, that the symptoms of both may be combined in various stages and degrees. The appearance of serum or coagulable lymph is very common, even when no redness or turgescence of the vessels remain, and which, though (as is supposed by Morgagni) it had previously existed, disappears on a copious effusion taking place; at which period, the symptoms assume a different complexion, constituting what I have called the second stage. It may, perhaps, therefore be admitted, that the great tendency to early effusion in this disease, is the cause of furious or phrenitic delirium being so rarely met with.

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* Cullen's Synopsis.

The absence, therefore, of furious delirium (I may say, almost in every case, the exceptions being so very few), and the great tendency to drowsiness, and coma, even in the earliest stages of disease, establish some difference between it and what is nosologically termed *Phrenitis*. It is therefore, perhaps, with some propriety, that another species, characterised by such symptoms, has received a place in some systems, under the title of *Cephalitis*.

In my paper, which appeared in the Edinburgh Medical Journal for October 1810, I adopted this term; not so much, however, with a view to nice distinction, or a display of nosological accuracy, as with the design of fixing the attention on the conspicuous features, and seat of the disease; expecting thereby to obviate more readily some errors in practice, which I conceived had arisen from its having formerly been universally considered a simple *idiopathic* fever; and as, for the reason above assigned, the term phrenitis, though of the same family, did not appear altogether so appropriate, or to combine so many of the circumstances attendant on this complaint.

On this part of the subject I shall not now detain you long, as I shall, perhaps, resume it at a more convenient opportunity. I shall therefore only briefly mention, with respect to the method of cure, that I have recently learned, that bloodletting had occasionally been practised in certain fevers of this country, at a period somewhat anterior to that at which I had fixed its introduction. The practice, however, of *copious* bloodletting, has not been long general among medical men in this army; and I presume, it can only be dated from the time that the appearances on dissection, of two patients, who died in Melazzo, in July 1809, (as related in my former paper), served to establish a more rational pathology of the disease. Previously to this, it is apprehended no fixed principles were known, to guide or direct its use; and we may thus, perhaps, account for the practice having been, for the most part, feeble and undecided. Though it might, for a moment, retard the progress of the disease, it was seldom sufficient to subdue it.

The symptoms of the second stage, in the mean time, began to make their appearance, and seemed to direct an opposite mode of treatment, and the result was generally fatal. Those symptoms which had formerly been attributed to debility, were now traced to their true origin; and the plan of giving bark and wine, when this stage approached, was universally abandoned, as soon as the testimony of indisputable facts superseded fallacious hypothesis and conjecture.

The vicissitude of seasons, and the various modifications of atmospheric constitution, powerfully influence the character of diseases, and the appearance of certain epidemics, in this climate. Accurate meteorological observations, therefore, as well as the investigation of those circumstances, which properly constitute medical topography, present an interesting field of inquiry, and not only facilitate the investigation of the cause of diseases, but form a branch of knowledge essentially connected with their prevention, and method of cure.

In remoter ages, this subject received particular attention, and almost every page of the writings of Hippocrates inculcates the utility of this study,—which was considered, by that great man, not less essential to the physician, in order to enable him to predict approaching changes, and guard against their effects, than it was deemed necessary by the Mantuan poet, for the husbandman and mariner.

> "Hinc tempestates dubio prædiscere cælo
> Possumus; hinc messisque diem tempusque serendi:
> Et quando infidum remis impellere marmor
> Conveniat; quando armatas deducere classes,
> Aut tempestivam silvis evertere pinum.
> Nec frustra signorum obitus speculamur et ortus,
> Temporibusque parem diversis quatuor annum."

As far as regards the great revolutions of the year, and the periodical return of the seasons, a great uniformity obtains;

and the observations of one year on this head, with but little variation, apply almost to every other.

On this depends the great uniformity of the diseases which usher in the different seasons. Those seasons, however, differ materially from each other; and a difference not less remarkable, and important in practice, characterises the diseases by which they are invariably attended; and which, agreeably to those changes, undergo certain alterations of type, as well as of other important symptoms.

The occurrence of the dry and rainy seasons may always, indeed, be expected with tolerable certainty, at the regular and accustomed periods. The diurnal vicissitudes, however, are very frequent; and, until the hot season has fairly set in, sudden changes of temperature are very common.

From the beginning of June may be dated the commencement of the hot season; from which time, until the beginning of September, the temperature continues pretty steadily about the same standard; and, as observed in the shade at noon, usually ranges between 82° and 86° of Fahrenheit's scale. During this period, east or westerly winds for the most part prevail; rain seldom falls; and it frequently happens that the months of June, July, and August pass away, even without a single shower. Of these, July is the hottest month, and the thermometer sometimes reaches the 89th degree; while the suffocating sirocco winds commonly continue until noon; after which hour a westerly breeze generally springs up.

About the latter end of May, inflammatory affections of the head begin to make their appearance; but they, as yet, are generally slight. In the month of June, however, and as the heat of the season advances, they become more frequent in their appearance, as well as more violent in all their symptoms.

About the beginning of September, the weather undergoes a very remarkable change, which is more particularly to be attended to, on account of the important influence it exerts as a cause of the disease which now succeeds. Together with a diminution of temperature, rains begin to fall, accompanied with thunder and high winds. About this time, the thermometer falls to 76°, indicating a diminution of temperature, not less than 10 or 12 degrees. This change is sudden, and produces a very conspicuous effect on the nature of the prevailing disease.

The fevers still are of the inflammatory kind, but the affection of the head no longer forms so conspicuous a symptom; instead of which, they now manifest themselves under the form of phlegmasiæ affecting other parts.

The showers, however, are but transient; the mercury in the thermometer again rises, but does not again attain so great a height; and the weather becomes dry and settled, until about the end of October, when heavy rains set in, accompanied with a considerable and permanent diminution of temperature, which puts a period to the violence and frequent occurrence of the epidemic.

During the winter, and spring, pneumonia and acute rheumatism are the prevailing complaints; but those which prove most tedious and fatal, are obstinate dysenteries, and intermittents; the common sequel of violent attacks of the autumnal fever, and dependent on chronic affections of the abdominal viscera.

Owing, no doubt, to the temperate and abstemious mode of living peculiar to the native inhabitants of these climates, as well as to constitution, and habits formed in infancy, those changes are not observed to operate so powerfully on them, as on the natives of more northern and frigid latitudes; and they are, at all seasons of the year, exempt from those violent attacks of inflammatory diseases to which the British soldier is more particularly subject.

The Sicilian peasantry are indeed uncommonly healthy, and robust; and some of the more elevated, and mountainous situations, furnish many instances of athletic constitutions, and remarkable longevity. But, wherever opulence and luxury have been introduced, or where these effects are not controlled by salutary laws, they soon become visible, not only in the moral character, but ultimately tend to the degeneracy of the species. Whether, indeed, it may be owing to the same general principle, which invariably is found to stamp the peculiar turn of mind of the inhabitants of alpine regions, I shall not take it upon me positively to determine; certain, however, it is, that among the Sicilian peasantry, there still does exist a freedom of manner and sentiment meriting some attention; and the idea of degeneracy, which we are accustomed so readily to associate with the name of the Italian, is to them inapplicable. "Ubi enim regio est nuda, naturâ munita et aspera, quæque et a frigore hyberno prematur, et a sole æstivo exuratur, ibi duros et robustos et articulis probe disjunctis, vegetosque et hirsutos reperias homines, et in quibus a naturâ laboris tolerantia et vigilantia insit; quique mores habeant pertinaces, ad iram proclives et contumaces, magisque feritate participantes quàm mansuetudine; insuper ad artes etiam acutiores et plus solertes, et ad res bellicas gerendas aptiores."*

But to return from this digression: On the approach of autumn, the character of the fever, as has been already said, undergoes a considerable change; and though this is effected by apparently slow gradations, one epidemic passing, as it were, imperceptibly into another, they not only differ essentially as to their exciting causes, but also in their origin, and seat; the febrile disease of summer arising from affections of the encephalon, depending on inflammation and its consequences; while those of autumn are more particularly dependent on inflammatory affections of the stomach, and other abdominal viscera.

Those who are attacked at the beginning of the season, still invariably complain of violent headache, languor, and severe pain in the loins, with nausea, and uneasiness in the epigastrium. These symptoms are ushered in by irregular rigours and lassitude, and are not unfrequently accompanied by profuse sweating over the upper part of the body. From the beginning, there is always a slight cough, but it is seldom such as to give much uneasiness to the patient, or even to be readily attended to by others. The region of the stomach is sometimes tense, and painful on pressure, and they complain of a sense of weight and fulness. Vomiting does not always appear on the first accession of the disease, but invariably comes on before the end of the second day, and vast quantities of dark-coloured bilious matter are thrown up.

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* Hippocr. de Aeribus, &c.

The state of the bowels is various. For the most part there are frequent, watery, dark-coloured bilious dejections; in the severer cases mixed with flakes, resembling coagulable lymph, and generally tinged with blood. At other times, we meet with obstinate costiveness from the commencement, in which case the symptoms always ameliorate as soon as we are able to procure a free discharge of the alvine matter. The tongue is always moist, and is often covered with yellowish mucus. The thirst is excessive.

During the early part of the disease, the general febrile symptoms are such as denote increased vascular action; the pulse, though soft, is always full, and usually exceeds 100 strokes in a minute. The countenance is full and florid; the eyes are lucid, and the vessels of the conjunctive coat are commonly injected with blood. These symptoms form the first series, and seldom continue beyond the third day.

As they abate or disappear, the patient shows extreme anxiety and restlessness, writhing with inexpressible agony, and changing his posture a thousand times, without finding ease or repose. Every thing received into the stomach is instantly rejected; the tongue becomes covered with dark, inky, or yellow-coloured matter, and the thirst unextinguishable.

About this time the countenance undergoes a remarkable alteration, bespeaking the sufferings of the patient. The eyes lose their lustre; and, about the fifth or sixth day from the commencement of the fever, the albuginea, and whole surface of the body, assume a dull yellow tinge. The pulse increases in frequency, and, in three or four cases, I have been able to count 140 strokes in a minute. It is very hard, and sometimes even continues full and soft, till within a few hours of the fatal termination of the disease.

The surface of the body always, at the beginning, exceeds the natural temperature, communicating to the hand an acrid, pungent sensation, but about this period it sinks to the ordinary standard.

Hæmorrhagy sometimes takes place from the nose, and it generally denotes a favourable change; which, however, is still more certainly to be expected from a return of the natural complexion, and whiteness of the albuginea. These form the second series of symptoms, which may continue two days longer; and are then succeeded by a state of quietude and great prostration of strength.

Delirium is seldom present; and though, during this stage, they lie apparently asleep, yet, when interrogated as to their feelings, they readily answer; they tell you they have no uneasiness, and appear perfectly in possession of their intellectual faculties, until the moment of their death. As this period draws near, the breathing always becomes very laborious, with heaving of the abdomen, and strong action of the pectoral muscles, and the breath is forcibly drawn through the nostrils. The vomiting sometimes ceases about this period; and it occasionally happens, that when stools are procured by medicines, they have a natural appearance. Flatulence sometimes appears at the beginning, but it more frequently takes place at this period, and is accompanied by singultus—and, after this last symptom, I never saw one recover. The forehead is now bedewed with cold clammy sweats; the countenance assumes a deadly paleness; the extremities become cold; the pulse sinks; and they expire with composure. The course of the disease is rapid; and it generally terminates before the ninth day.

Though such is the more frequent mode of attack, it sometimes, however, happens, that its approach is not only less violent, but also less sudden. In this case it begins with loss of appetite, irregularity of the bowels, and sense of weight in the region of the loins, with heat and distention about the præcordia. They are listless, and averse to every exertion, both mental and corporeal. These premonitory symptoms are frequently the harbingers of the most serious attacks. They are attended with languor, anxiety, and great prostration of strength. Sometimes irregular flushings of heat succeed; but neither the temperature of the body, nor the state of the pulse, indicates any material deviation from a state of perfect health.

In this variety, the determination to the head is less conspicuous, and the eyes, though lucid and bright, are never suffused with blood. The thirst is not to be extinguished; the tongue is moist, and of a pale smooth clay-colour. While these symptoms continue, there never is much expression of pain or uneasiness; but this I have found one of the most dangerous symptoms, and which, in almost every case, portends a fatal event. Vomiting sets in soon after, with hiccup, and fruitless efforts at stool. Hæmorrhagy from the nose, though less frequent in this form of the fever, nevertheless sometimes does occur, and is almost always accompanied by petechiæ, or large irregular livid blotches on the arms and thighs; the pulse becomes full and bounding, and some other such marks of general hæmorrhagic tendency appear, and which are always to be regarded as highly dangerous. Other eruptions, however, are sometimes discovered, which afford evident relief from the most obstinate vomitings and bilious diarrhœa. They are generally of the miliary kind, or resemble urticaria, and are to be regarded as favourable omens.

In the case of a lad, about twenty years of age, who was affected with violent symptoms, with a full soft pulse, beating 120 in the minute, attended with incessant vomiting, and slimy bilious evacuations by stool, great anxiety and restlessness, an eruption of the nature of urticaria, in blotches about the size of the hand, appeared on his thighs and arms on the fourth day of the disease, and gradually spread over his whole body. Towards the evening of the same day, the vomiting ceased; a copious sweat broke forth, and the pulse fell to 84. On the following morning the eruption had nearly disappeared, and the surface of his body was still covered with gentle moisture; he had five liquid stools, of a natural colour, during the night; the vomiting had not returned, and the anxiety and restlessness had entirely ceased. This case occurred about the latter end of September, and terminated afterwards in tertian intermittent, which was finally cured by the internal use of mercury.

It is not always, however, that the disease preserves this uniform continued course, but is subject to diversity of form, not less frequently affecting its type, than its manner of approach and early symptoms.

When the epidemic first appears, in the early part of autumn, the general febrile symptoms preserve the most continued form, nearly throughout the whole progress of the disease, and only show some tendency to remit, after the violence of the excitement has been subdued. At its commencement, therefore, it bears a very strong analogy to the bilious remittent fever of all warm climates; it is closely allied to that fever which annually visits other parts along the shores of the Mediterranean sea; and it seems to differ only in degree, from those more dreadful epidemics, whose ravages, at different times, have been so severely felt, throughout the greater part of the western hemisphere.

In a late publication, however, on the diseases of Sicily, and under the title of autumnal fever, the history of a disease is given, which, in some essential symptoms, differs considerably from that which I have now described. To this circumstance it, in this place, behoves me to advert. Had the author survived, it doubtless would not have escaped his notice. The service was prematurely deprived of his abilities; he is no more, and I shall not attempt to explain it. I respect his memory, and I admired his talents.

At a more advanced period of the season, the fever frequently assumes the intermittent type, and becomes continued after the second or third revolution. At other times, it occasionally also, though of the most continued form during the first and second days, and attended with symptoms of considerable excitement, readily intermits on the abstraction of a moderate quantity of blood; still, however, distinctly marked by its specific and peculiar signs, depending on local organic disease.

Those varieties are most frequently observed after the disease has prevailed some time, and are materially influenced by the changes which then take place in the sensible condition of the atmosphere, accompanying the regular revolution of the seasons, and are such as regard either its temperature or humidity.

In Sicily, this fever usually makes its appearance about the same time that cholera morbus and other disorders of the biliary organs are known to prevail, and both diseases seem to arise from causes nearly of a similar nature. It indeed appears to be essentially necessary to the production of this fever, that a considerable diminution of temperature, accompanied with much humidity of the atmosphere, should *suddenly* succeed to the long continued heat of summer. By those causes, an important change is effected in the balance of the circulation, causing an unusual determination to the abdominal viscera, and producing congestion and inflammation of the hepatic system, in various degrees, followed by an increased and vitiated secretion of bile.

It is therefore on this change first taking place, that the fever is most severe, as well as most fatal in its tendency. It then assumes the most continued form, and the local symptoms are at this time also most violent, which seems to be owing to the intensity and sudden application of the cause; for, after its first effects have passed, and the body has for some time been habituated to an atmosphere of a much lower degree of temperature, the cases which follow are of a less formidable nature.

But whatever type this fever may assume, or how complex soever and involved its revolutions may appear, the local and characteristic symptoms are the same, and differ only in degree. This variety of type I am therefore inclined to consider rather as accidental, than as constituting any essential difference in the nature of the disease; which I conceive to be radically the same, and to be cured on the same general indications; which are directed solely to the relief of the local affection, and not to be regulated by any peculiarity of type the fever may put on.

As the disease always arises from local inflammation, the common circumstances which favour the production of all diseases of this class, are those which also tend to give it the continued form; while debilitating powers, within a certain limit, in proportion as they subdue the activity of the local inflammation, dispose the fever to remit, and, in many instances, even produce complete apyrexia. As I have already said, this is often effected by copious and early evacuation; while, on the other hand, stimulating medicines, or a few doses of bark, imprudently administered, increase the severity of all the symptoms, and produce a continued fever.

Though the young, plethoric, and robust are most subject to attacks of this disease; as far, at least, as I have had an opportunity of observing, persons who have but newly arrived in the island, about the time it begins to appear, are seldom seized; though they are invariably most liable to suffer from summer fever, while those who have resided in the island during the preceding summer, are its common victims:—from which it seems highly probable, that, during the hot season, the rudiments of the disease are in some measure formed, and are called into action on the first approach of autumn, or in situations where the common exciting cause of this disease most usually prevails.

About the time this fever began to appear in the 62d regiment in 1811, a detachment of eighty recruits arrived from England. They were young and vigorous; they were subjected to the same mode of life, and lodged in the same buildings with those who had lived some years in this country; but among them not a single case of this fever made its appearance, and every man who was taken ill, had at least been twelve months in the island. From the time the fever assumed a decided character, which was about the 1st of September to the end of October, eighty patients were admitted into the Regimental Hospital, and very few indeed exceeded 28 years of age. Thirteen cases terminated fatally. It is, however, to be observed, that, among these, are included three patients who died after the third week from the date of their admission into the hospital, and who were carried off by a dysentery, supervening after the fever had been overcome.

Though bilious remittent fever is more particularly a disease of autumn, it is not only more predominant, but its appearance is also more early, in certain situations, whose local circumstances and topographical relations subject them more generally to the influence of similar changes of atmospheric constitution.

Thus, all situations in the vicinity of the coast, particularly such as are not much elevated above the level of the sea, independent of the proximity of marshes and exposure to putrid effluvia, are extremely favourable to the production of this disease. Few situations are more unhealthy than low grounds bordering on large *fiamare*, where they terminate in the sea; the waters of numerous springs, descending from the mountains, filtrae through the loose and stony soil, till they reach the bed of the ecean. In such places, water may be found at no great depth from the surface, by which the surrounding atmosphere, if not freely exposed to strong winds, is loaded with humidity; and diseases of the alimentary canal, arising from checked perspiration, are common. The disease was often produced among the soldiers by severe night-duty; and, not unfrequently, it was traced to exposure to a shower of rain. Much also depends on the nature of the prevailing winds; for those places which are exposed to winds, which blow over a vast tract of ocean, are always most unhealthy; and we observe, *cæteris paribus*, that the more elevated the situation, or the more remote from the sea, the more healthy is it found; as the vapour, with which these winds are saturated, is either intercepted by intervening obstacles, or absorbed on its passage over a scorched and arid soil. It has been remarked by Hippocrates, that westerly winds are most unhealthy; "venti enim occidentales similes autumno sunt."

I have never known an instance of its being propagated by contagion. In this country the *febrile diseases* of this class are very few, and, as far as my observation goes, are entirely limited to the exanthemata.

From every observation I have been able to make, and from the most careful attention to a vast number of cases of this disease, which have come under my care, in the course of five years practice in this country, as a regimental surgeon, I must acknowledge, how contrary soever it may be to generally received opinions, that I am not inclined to attribute much to the operation of what we commonly understand by *marsh miasma;* and I have not been able, in any case which I have seen, by direct or irrefragable proofs, to trace the origin of this fever to such a cause. Indeed, were the putrid effluvia of marshes so powerful, or the sole agent on this occasion, we should expect, that the intermittent form would have been most common at the time this cause is generally supposed to be most predominant, namely, during the time that rains were not yet exceedingly abundant; while, at the same time, the temperature of the atmosphere suffered only one transient diminution, being immediately again succeeded by intense heat. During this period, however, the disease was most severe, and also preserved the most continued form; and only slight and obscure remissions were observed towards its termination;—for it was not until the weather had become finally settled, and permanently colder, and that the rains had totally ceased for several weeks, that the symptoms became milder, and the intermittent form more common.

Many, indeed, who have escaped from the more violent attacks of the disease, relapse in the month of December, and are then seized with obstinate intermittents. Such cases are generally accompanied by general dropsy or fatal dysenteries, produced by chronic diseases of the liver, spleen, or other abdominal viscera.

It is supposed, therefore, agreeably to the foregoing facts, supported by the evidence of numerous dissections, that certain diseases of those viscera are to be regarded rather as the origin and cause, than the consequence of this fever, under whatever variety of form it may appear; and it is not imagined that the enlargement of those viscera, so frequently observed in subjects who have suffered from repeated attacks of such fevers, affords any argument against the general doctrine which I have endeavoured to establish, but may, perhaps, be more rationally accounted for, by the successive repetition of some power, on whose casual application the chronic diseases of those parts assume a more acute form, at length producing total ruin of their structure, as well as increase of size.

The succession and order of the symptoms, marking the different stages and types of this fever, will be readily explained by the appearances on dissection, and seem to depend chiefly on the degree of inflammation and the sensibility of the part concerned. When the liver is very violently affected, the symptoms sometimes even resemble those of hepatitis, and which more especially appear at the commencement of the fever; and inflammation of the stomach is sufficiently characterized by the anxiety, restlessness, vomiting, and prostration of strength, which immediately follow.

As a common consequence of extensive peritoneal inflammation, we sometimes find a quantity of serum effused into the cavity of the abdomen, and various adhesions formed between its parietes and the contained viscera; and the omentum at other times so much wasted, as to resemble merely a tissue of red vessels. The liver almost always exceeds its natural size, and is also considerably altered in colour and texture. It is always softer than natural; and the system of the vena portæ is always turgid with blood. The peritoneal covering of the liver is often thickened and opaque, and is sometimes studded with white spots, or with flakes of coagulable lymph. Sometimes its surface is irregular, and small indurated portions are discovered on its convexity; which, when cut open, are found to proceed from obstruction of some ramification of its excretory ducts, produced by inflammation of its coats, and favouring the accumulation of viscid bile. The coats of the cyst generally partake of the inflammation. The colour of the bile it contains is various, and it is sometimes so viscid and thick, that it can scarcely be forced out by strong pressure.

A remarkable alteration also takes place in the appearance of the spleen. It does not always, however, exceed the natural size, but its softness is often such, that it can only be compared to a mass of coagulated blood; while, at other times, it has an unusual degree of hardness, with thickening and whiteness of its peritoneal coat.

The stomach is as frequently found contracted and empty, or inflated with air, or distended with variously coloured fluids, and even pure bile. Sometimes, inflamed spots are discovered on its peritoneal coat; but the internal surface is the most frequent seat of disease. The texture of the villous coat is often completely destroyed, and it exhibits an uniform red, of the deepest hue, in several places approaching to a livid colour, and is covered with coagulable lymph, or a secretion of puriform matter tinged with blood. In other cases, the inflammation is more limited, and appears in rosy patches over its internal surface, or in numerous minute red specks.

This inflammation is never of the phlegmonous kind, but, like true erythema, successively invades one part after another, frequently creeping along the whole course of the alimentary canal, attended with thickening and pulpiness of its coats.

The brain and its membranes shew no uncommon appearances, or marks of previous inflammation.

The lungs are not affected; but I have often found a large quantity of serum, of a yellowish colour, collected in the pericardium, while the heart seemed to have suffered from inflammation; and, in two or three cases, I observed white patches of coagulable lymph, apparently converted into firm glistening membrane, easily separated from its proper coats, on different parts of its external surface.

When this disease appears in a regiment, the utmost vigilance is required on the part of the military, as well as of the medical officers of the corps, to detect it in its early stage; for I know not an instance in which, after the third day, the best directed medical efforts were at all sufficient to arrest its course. I cannot, therefore, in this place, forbear mentioning, that it has been my good fortune to be surgeon to a corps, at all times commanded by an officer, from whose zeal and humane exertions I have ever received the most cordial assistance, whenever it had the misfortune to be visited by serious or epidemic diseases.

Such, indeed, is the rapid progress of the disease, and the great delicacy of the organ principally concerned, that our measures must necessarily be prompt and vigorous; and under whatever varieties it may appear, with respect to type, the local symptoms always require our first attention, and indicate the necessity of copious evacuation of blood. If the fever be of the continued form, under such treatment it very often becomes intermittent; and when of this latter form, we thereby prevent its being changed into a more dangerous type, in the course of its progress.

From the use of this remedy we are not always to be deterred by the smallness of the pulse; and even if deliquium should come on after the abstraction of a few ounces of blood, the operation may be repeated soon afterwards, without the occurrence of the like accident.

The indiscriminate use of the term *debility*, derived from some of the more general phenomena of disease, without regard to its essence or cause, has led into egregious error in the treatment of this, as well as of some other complaints, which are commonly considered as simple idiopathic fevers. The anxiety, languor, restlessness, and prostration of strength, which accompany this epidemic, are not symptoms of debility, but of gastritis, and depend on the peculiar structure of the organ, and its extensive sympathy with the whole system. A free use of the lancet is required; and, in order that this remedy may be productive of beneficial effects, it must be had recourse to at an early period of the disease. Even when the disease was too far advanced for any permanent advantage to be expected from venesection, its effects have been discovered by a temporary increase of fulness of the pulse. What is here said, applies equally to general and local bloodletting; and this last mode may be employed with considerable advantage.

In the inflammation of all delicate and highly sensible membranes, unless we succeed in the first instance, we in vain attempt to subdue it afterwards, by acting on the arterial system at large, and still further diminishing the *vis à tergo:* for the disease makes rapid progress; the texture of the organ is speedily destroyed, and its vitality is irrecoverably lost.

Recourse must, therefore, at the same time, be had to such means as possess some control over the vessels of the part, suitable to its peculiar functions and organization; and the effects of local bloodletting, by the application of a number of leeches to the region of the stomach, are to be further assisted by large and repeated blisters.

Nothing so much aggravates all the symptoms, as the presence of acrid bile, and accumulated feculent matter. All irritation, therefore, from such causes, is to be carefully prevented; and, with this view, the contents of the intestines are to be dislodged on the first approach of the disease, and their accumulation cautiously guarded against during its continuance. For this purpose, small doses of purgative medicines must be frequently administered. It too often happens, however, that the irritability of the stomach is such, that medicines of this class cannot be retained, but are instantly rejected; and recourse, therefore, must also be had to large emollient and laxative clysters, which must be frequently injected, and are, in all stages of the fever, of the most essential service. As a purgative, no medicine is so well adapted to this complaint as the sub-muriate of mercury; and its operation may be sometimes advantageously alternated with the use of sulphate of magnesia dissolved in water, and plentifully diluted.

The effects of mercury, however, are not to be estimated solely by its purgative quality; but it seems to be chiefly useful, on account of its specific action on the hepatic system, and its power of affecting, through the medium of the circulation, secreting surfaces endowed with high irritability, and in a state of inflammation. This remedy is, therefore, to be used externally, as well as internally; and is to be resorted to immediately, as the most powerful remedy we possess in the treatment of this disease. Its effects, however, do not always depend on the quantity introduced; but on certain conditions of the system, by which the latter is rendered more or less susceptible of its action, and which I do not pretend to explain.

This susceptibility is indicated by the effects produced on the salivary glands; some degree of ptyalism follows, which affords the surest prognostic of a favourable termination; and the change produced in all the symptoms is generally quick and rapid. It sometimes, however, happens, that the largest doses will not produce salivation, and, in such cases, the event is invariably fatal.

From the rapid manner in which we are frequently induced, on account of the severity of the disease, to introduce this medicine into the system, copious salivation is frequently occasioned, and often appears suddenly, with bleeding from the gums; but, as no advantage is to be expected from the mere secretion from salivary glands, I have succeeded equally well, after having ascertained its influence over the disease, by continuing its use in small doses, merely sufficient to keep up the mercurial irritation in the system, until the disease was completely overcome. From what has been said, it needs scarcely be observed, that the practice of besmearing the gums with mercurial ointment, or rubbing them with calomel, for the purpose of encouraging this secretion, is extremely ineffectual.

Sometimes severe diarrhœa comes on during the early stages of recovery, attended with want of sleep; in which case, I have derived the greatest advantage from small doses of opium, combined with calomel. It is, however, to be remembered, that under no other circumstances whatever, is opium to be recommended in this disease.

As far as I have had an opportunity of observing, cold effusion does not appear so well adapted to this species of fever, as to that which prevails during the summer. Indeed, if the external use of cold water can ever be recommended in this fever, it promises to be most successful in those cases which show a more decided tendency to assume the intermittent form, when they happen to be occasionally attended with some degree of determination to the head. Under such circumstances, I have frequently employed it in the manner of cold ablution, during the hot stage, with manifest advantage. From a few trials I have made of the tepid bath, during the second stage of the disease, I am inclined to think it may sometimes be employed with advantage.

The alternation of these remedies has lately been practised and recommended by some physicians; and something of the same kind is also mentioned by Celsus,* from whom, perhaps, the idea has been borrowed. Of such practice, however, I cannot speak from experience.

Attention ought also to be paid to the regular discharge of urine, which is sometimes scanty; and though secreted by the kidneys, is not duly evacuated;—for which purpose, therefore, I have often been obliged to have recourse to the catheter.

We are usually advised, in *all* fevers which show a tendency to intermit, to watch this period carefully; and to avail ourselves of the earliest opportunity such circumstance affords, of exhibiting bark in large doses, with a view to obviate the *debility* which, it is said, predisposes to the formation and return of another paroxysm. That in *some* fevers, and in certain habits and constitutions, this may be highly expedient and advisable, I do not venture to deny, as such practice stands supported by the best authority, and is justified by ample experience.

Without entering, however, into an examination of the above principles, which generally direct its use, I feel myself warranted to affirm, from the result of several cases in which this plan was adopted, in *the fever now under consideration*, that bark served only to exasperate the local disease, and to aggravate every symptom of the succeeding paroxysm.

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* Celsus, lib. i. 4. and iv. 2.

In many cases which occurred towards the final cessation of the epidemic, at the close of the autumnal season, the local symptoms were much milder, and the fever became intermittent, after a moderate evacuation of blood, and a free use of laxative medicines. In those cases, calomel was the medicine I chiefly employed; and I almost invariably observed, that, when carried to an extent sufficient to manifest its action on the system by the usual criterion, the paroxysms soon after ceased to return.

When relapses occur, and the strength is at length a good deal exhausted, it becomes necessary to support the patient under the action of the mercury (which must be given in small doses), by a nourishing diet and the use of generous wine. Bark then becomes an useful auxiliary; and warm clothing, gestation on horseback, and change of scene, greatly facilitate the recovery.

SELECTED REVIEWS.

An Introduction to Medical Literature; including a System of Practical Nosology: Intended as a Guide to Students, and an Assistant to Practitioners. By THOMAS YOUNG, M. D. F. R. and L. S. Fellow of the Royal College of Physicians, and Physician to St. George's Hospital. 8vo. pp. 602. London. 1813.

[From the London Quarterly Review, for March 1813.]

AT a time when so much discussion has been provoked, and such activity displayed in pursuit of the best method of instilling the rudiments of grammar and arithmetic, we cannot but persuade ourselves that a proportionate ardor will be excited by every endeavour to improve the higher branches of knowledge, and to diffuse the elements of more exalted science. In this latter class medicine holds a distinguished rank —whether we consider the enlarged field of information on which it is raised, the numerous subjects for reflection which it comprehends, or the beneficial application of its powers to the comfort and continuance of life. Under these impressions, we are confident that we are performing an acceptable service in accommodating ourselves to the prevailing taste, and in calling the notice of our readers to Dr. Young's recent work on the literature and study of medicine. A brief description of the object and execution of this publication will be no less interesting than useful, and we shall exhibit the author's views and intentions in his own words.

'In a science so complicated and obscure as that of physic, the want of some direction for the assistance of a student has been the more felt, as the difficulty of the execution of such a work has been greater.'—'In no department of human knowledge is the work of literary discrimination more necessary than in physic; in none is it more difficult, and in none has it been more neglected, at least in this country.—The non-existence of any work in the English language, resembling that which is now offered to the public, while the subject is of the most undeniable importance, must be admitted as an apology for its appearing with many imperfections in some degree inseparable from the nature of the undertaking.' 'The collection of literary information, and of references to various authors, is a step which ought always to be preliminary to the execution of a detailed treatise on any department of science. Having completed this collection, I have been principally induced to lay it separately before the public, by the approbation which has been bestowed on the second volume of my lectures on Natural Philosophy, consisting principally of a similar methodical catalogue of the literature of all the subjects which had been explained in an elementary manner in the first volume.' 'To assist in furnishing the student with a sufficient direction for cultivating any particular department of his profession, in the most advantageous manner, is the principal object of this work.' Pref. pp. 3—8.

Medical education amongst us is carried to the highest perfection, as far as regards the assistance to be derived from lectures and hospitals; but there has always been wanting a guide in the closet, a director in literary research. It is no less true than strange, that no attempt to supply this deficiency should have been made before; and that, while the acquirement of the other learned faculties, as well as of moral and political, metaphysical and natural philosophy, has been facilitated by the aid of the most distinguished ornaments of those professions and sciences, physic alone should have been suffered to remain unassisted, in this respect, by any of its professors, in a country so justly celebrated for its medical attainments. The work before us will remove the stigma, and complete our system. It is not, however, to the student alone, that this introduction will be found of use, it will prove equally serviceable to those far advanced in knowledge. The mere perusal, indeed, of the catalogue of references, will often be alone sufficient to awaken recollection, by reviving the trains of interrupted impressions, through the association of system, or the influence of names; and of such an auxiliary, practitioners, from the nature of the science, are continually in need.

Preparatory to directing the student in his medical duties, Dr. Young has with great propriety called his attention, in a preliminary essay, to the general education upon which those studies must be engrafted; to the professional expectations which may reasonably encourage his pursuits, and to the moral and intellectual qualifications required to attain the objects of his ambition. The principal part of this essay consists of an elegant translation of a work by Professor Vogel, enlarged and illustrated by the reflections of the author. This dissertation abounds with useful instruction and strong sense. The character of the science and profession of physic here delineated, inspires us with exalted notions of their excellence, when carried to the perfection thus prescribed.

'Medicine not only comprehends so very extensive a range of knowledge, but its truths are often so profound, and so much concealed from a cursory inspection, so intricate, so much disguised, distorted and obscured by a multitude of delicate and invisible causes, that nothing less than the all-commanding eye of the most enlightened understanding, than the all-penetrating and all-searching power of genius, can possibly recognise that which is hidden in darkness, can follow that which is remote into the last traces that it imprints, can distinguish certainty from opinion and probability, can separate the essential from the accidental, and finally can analyse and develop any subject of investigation so completely, as to leave no further doubt respecting any of its properties, which are cognissable by human means.'—Prelim. Essay, p. 7.

'Perhaps there is no science which requires so penetrating an intellect, so much talent and genius, so much force of mind, so much acuteness and memory, as the science of medicine. For the full attainment of its proper and ultimate object, it requires also, indispensably, the possession of stability of judgment, rapidity of decision, and immoveable firmness and presence of mind, readiness of recollection, coolness, flexibility of temper, elegance and obsequiousness of manners, and a profound knowledge of mankind, and of the secret recesses of the human heart.' p. 9. 'These qualifications can only be obtained by means of a good education, united with opportunities of becoming acquainted with the world, and habits of intercourse with society.'

The course of general and of medical education here laid down, as necessary to be pursued, coincides so nearly with the present general practice, that it will be readily admitted to be right. In conclusion we are furnished with a demonstrative refutation of some opinions published by Dr. Brown, in discouragement of our reliance upon the efficacy of medical practice.

'This discussion appeared essential, since, if it were true that the medical science of the most celebrated professors could effect so little, under circumstances so favourable as he has supposed, the public would have scarcely any motive left for encouraging a pursuit so fruitless, nor an individual for devoting himself with zeal and enthusiasm to the attainment of knowledge, where nothing further than doubt and difficulty could reasonably be anticipated.' p. 25.

We come now to the body of the work. Medical literature is very extensive; and to render so large a collection manageable by a student, it requires to be reduced and distributed into systematic order. Here peculiar difficulties occurred, 'since there is no science in which selection is so important and so difficult.' p. 43. One cause of this difficulty is the state of medical literature, which, for the most part, is either desultory and detached, or involved in artificial and erroneous combinations. To combine the one and disunite the other requires infinite labour and research. The author appears to have been very attentive to the difficult task of selection, 'having inserted no books but such as he conceives to be necessary to a complete medical library.' Pr. p. 11. These have been chosen for their reputation, authority and usefulness. To the titles of the most important is often adjoined a concise critique upon the merits of the work, a short account of its contents, and a distinguishing mark expressive of its relative value in a course of study. Having finished the selection, the next proceeding, to fit it to use, was the arrangement of the subjects into their respective parts. Without the employment of a philosophical method, the collection, however ably selected, would have continued inaccessible to a student, and the catalogue have conveyed no further information than those of the same kind which have been published on the continent. The greater part of these, which profess to be guides to medical literature, scarcely answer this purpose better than the digested catalogue of a medical library, as disposed for sale. What was required was a dictionnaire raisonné; and this the author has furnished. We find his ingenuity here applying a precision, almost mathematical, to an extensive yet minute classification; so that the enquirer is enabled, by the natural dependence of the distribution, to obtain information upon any single point of medical science. The force of this arrangement may be regarded in the same light as the geometrical aids employed in geography, which empower us to lay our finger upon the most insignificant spot upon the surface of the globe; and thus facilitate our investigations into its history and nature, its relations and its use.

The first department of this distribution is allotted to works on medical literature in general, and is divided into eleven sections. The plan then breaks into certain general classes, disposed according to their natural sequence. 1st. Those works which treat on the properties of matter in general, or on chemistry. 2d. On the arrangement of matter in the structure of the body, or on anatomy. 3d. On the functions or intentions of that structure, or on physiology. 4th. On the disorders of that structure, and of those functions, or on pathology. 5th. On the removal of those disorders, or on therapeutics.

In the system, or rather systematic nomenclature, of chemistry, the author has availed himself of all the new lights which have been thrown upon this branch of philosophy, by the discoveries and arrangement of Sir H. Davy, in his late illustrations of electrochemical science. This compendium contains a brief abstract of the objects, laws and combinations of chemistry in its most improved state.

The divisions of anatomy have been always fixed and certain, being determined by the different component parts of the body, and are distinguished here by the usual titles of osteology, myology, splanchnology, dermatology, angiology, and neurology. To assist the memory upon these points, tables of their respective subjects are introduced.

Physiology, having for its object the explanation of the functions of the parts enumerated in anatomy, divides itself, of course, into similar heads; and is distributed into classes relating to the office of the nerves, bones, muscles, vessels, and viscera.

The division which succeeds, as it is the largest of the whole, and most applicable to medical instruction, seems also to have most engaged the author's attention; and to bear, in consequence, the strongest marks of the exertion of industry and genius. After a few sections upon points connected with general pathology, we are presented with a new system of nosology. For this innovation, satisfactory reasons are adduced in the Preface. The necessity of departing from the system of Dr. Cullen, which has been most generally received, is there made apparent; and the omission of every other which has since appeared is sufficiently justified. In the construction of a new system, the author has conformed himself 'to the strict rules of Linnæus, notwithstanding the irregularities which embarrass the classification of diseases.' Pref. p. v. To enable the reader to ascertain the preciseness of this accommodation, and at the same time to put him in possession of a treatise of much general application to philosophical arrangements, the author has furnished him with a translation of great part of the Philosophia Botanica of Linnæus. Notwithstanding the ability manifested in this part of the work, Dr. Young does not arrogate to it any undue importance. He seems sufficiently aware, that systems of nosology are little better than technical aids. He will not dissent from our opinion, that they afford but little elucidation to pathology, and are most serviceable in assisting the memory and facilitating research. How little applicable the distinctions of sytematic arrangement are to the varieties of disease, in comparison with other objects of science to which they have been attached, is evident from the following declaration:

'It is true, that we must not expect the same rigid accuracy in medicine, that may be obtained in some of the departments of natural history; since, in fact, many of the distinctions which are required in a nosological system, are rather established for the sake of practical convenience, than strongly and immutably characterized by nature.'—Pref. p. iv.

The body is not composed, like the objects of chemistry, natural history, or abstract science, of independent forms and members—it is one whole; it lives and suffers as a whole, and cannot be separately and unconsciously injured in any part. It is impossible therefore, strictly speaking, for any part to sustain an individual disease. If one member be disordered, the rest will be reciprocally affected. A sympathetic connection unites all divisions and systems of the human frame. Like joint-tenants, all the component members hold a communion of interest, and affection and power, not separately and individually, but 'per my, et per tout.'*

For the particulars of this reformed system of nosology, we must refer our readers to the work, as it is too extensive for recital, and yet too concise for abridgment. We shall content ourselves with enumerating the titles of the classes and orders.

Class I. Paraneurismi. Nervous diseases. (Consisting chiefly of the Neuroses of Cullen.)
Class II. Parhæmasiæ. Sanguine diseases.
  Order 1. Phlogismi. Flushes. (Chiefly simple inflammations.)
  Order 2. Pyrexiæ. Fevers.
Class III. Pareccrises. Secretory diseases.
  Order 1. Epischeses. Retentions of various kinds.
  Order 2. Apocenoses. Effusions of secreted fluids.
  Order 3. Cacochymiæ. Cachexies, or vitiated secretions, (as dyspepsia, podagra, diabetes.)
Class IV. Paramorphiæ. Structural diseases.
  Order 1. Paraphymata. Local changes, (for instance, tumours.)
  Order 2. Epiphymata. Eruptions, (chiefly cutaneous.)
Class V. Ectopiæ. Displacements, (including surgical and obstetrical cases.)

The genera, species, and varieties, are equally extensive and defined. From a due examination, it will appear, that this is the most exact and practical nosology which has hitherto been submitted to public attention. The merit of this system consists, not merely in the absence of the objectionable parts of that of Dr. Cullen, but in the incorporation of Dr. Willan's valuable nosology of the skin, and in the addition of a great variety of diseases hitherto confined to chirurgical collections. That imperfections should still remain amidst so much improvement, is not altogether chargeable to the author. 'Many are inseparable from the nature of the undertaking,' others depend upon the progressive and defective state of the science, and some will give way, under more favourable circumstances than a first essay, to future correction. We have an earnest of this last expectation, in the numerous amendments introduced by the author into his present system, since it was first published in his syllabus of a course of lectures, for which it was prepared: and we will even venture to suggest to him, that a little more equality in the allotment of his references would be a material improvement in a future edition; several diseases of considerable importance being dismissed with very slight notice, while others, comparatively insignificant, are almost overwhelmed with a profusion of authorities. The author has arranged the different accounts which have been given of the yellow fever, under three different genera, causma, synochus, and anetus; we are rather disposed to believe that the disease is always essentially the same, and dependent on paludal effluvia. He has followed Dr. Crichton in suppressing the order of the exanthemata; an innovation, which has produced some difficulty in the arrangement of scarlatina, measles, and smallpox; diseases which certainly do vary in the type of the fever attending them, in such a manner, as to require some other generic character, than can be derived from the nature of that fever alone; we do not deny that some of these difficulties are almost unavoidable; but we trust that something more may hereafter be done for overcoming or diminishing them, than our author has hitherto effected.

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* Blackstone, Vol. II. p. 182.

The remaining division of the work, referring to the means to be used for the removal of disorders, differs but little in its arrangement from that which is usually admitted into all later systems of therapeutics. The subdivisions are established upon the acknowledged agency of pharmaceutical means. Posology has been usefully annexed to this part of the subject; and there are added, as intimately connected with pharmacy, the very ingenious tables of chemical affinities, constructed by

Dr. Young, and already published in the Philosophical Transactions.

The extensive range of the author's literary attainments has enabled him to give us a translation of some of the Swedish works of Professor Berzelius, upon animal chemistry, and the laws of chemical combinations. This compendium contains the chief of what has been discovered upon the subject, so interesting and important to a medical philosopher. The authorities upon which the facts and opinions rest are historically detailed, together with the corrections afforded by the arguments and experiments of the professor, and the discoveries which he has made in this department of chemistry. The name of Berzelius is a sufficient surety of the value of this treatise.

Two essays, by the author, close the volume; the first containing remarks on the measurement of minute particles, especially those of blood and pus, and the last on the medical effects of climates.

The observations and discoveries in the former are not only relevant and subservient to physiology, but, in a more especial manner, to pathology, by the suggestion of an easy mode of distinguishing morbid from natural secretions. It has always been a desideratum with medical practitioners to obtain some test of the difference between pus and mucus; as being the products of different states of the secerning vessels. Most of the chemical methods, which have been pointed out, have been found in practice insufficient or inconvenient. Dr. Young, however, has invented an optical test of a decisive power, and of easy application. The optical discoveries which led to this invention, and to the present observations, were read before the Royal Society in July, 1802, from a paper by the author, entitled, 'An account of some Cases of the production of Colours, not hitherto discovered.' Having given a test, 'applicable to all cases of minute particles held in suspension in transparent fluids,' he proceeds to observe, that

'Where the greater number of the particles are nearly equal in dimensions, a luminous object, viewed through them, is surrounded by rings of colours, somewhat resembling those of the rainbow, but differently arranged, and often beautifully brilliant. The blood, a little diluted, always exhibits them in great perfection, and they afford a very accurate criterion for the distinction between pus and mucus. Mucus, containing no globules, affords no colours, while those which are exhibited by pus exactly resemble the appearance produced by the blood, the rings being usually of the same dimensions.' 'A minute quantity of the fluid, to be examined in this manner, may be put between two small pieces of plate-glass, and if we hold the glass close to the eye, and look through it at a distant candle, with a dark object behind it, the appearance, if the globules are present, will be so conspicuous, as to leave no doubt respecting their existence.'—P. 547.

This discovery he has further improved, by rendering it applicable to the measurement of the fibres of the wool, hair, and other substances employed in manufactures; the construction of an instrument for this purpose is next described, and its uses explained. These principles and optical observations are employed also for the solution of some microscopical, optical, and meteorological phenomena.

The essay ont the medical effects of climates, will be read with equal eagerness and advantage by medical practitioners, and by those whose health requires them to consult the means of obviating the effects arising from the variableness of the weather. It contains all that can be said for their information in a medical point of view, and is replete with judicious remarks. These are grounded on philosophical observations, and are urged with much force.

The stile throughout is clear and polished; refined without affectation, and easy without the sacrifice of dignity and correctness. It may be regarded both as an example and incitement to the introduction of a more finished mode of writing in medical compositions. We are not pronouncing too favourably of this work, when we express our confidence that, stored with such valuable learning and information, and enriched with such advantages of method and composition, it will not only be resorted to as a direction to students, but will find its way, as a book of reference, into the hand of the enlightened physician. It is no less a guide to youth, than a staff to age; and both descriptions of practitioners are under great obligations to the author for this productive effort of talent, labour, and erudition.

ORIGINAL PAPER.

TO THE EDITORS OF THE ECLECTIC REPERTORY.

The following case is sent for insertion in the Eclectic Repertory, if it shall be deemed worthy of a place.

I am respectfully,
Your obedient servant,
PEACHEY HARRISON.

Case of a Wound in the right Shoulder, inflicted with a pointed instrument.

SEPTEMBER, 22d ultimo, was called to see Benjamin Erwin, jun. on account of a wound which he had, a few days before, received in his right shoulder, near the end of the acromion process, and which had been inflicted with a pointed instrument, and had become extremely painful. I found, however, the wound nearly cicatrized, and the swelling inconsiderable. I advised for the present, the application of large warm poultices to the shoulder and arm; and as he was somewhat feverish, gave him a purge of sulphate of soda; and after the operation was over, directed sufficient doses of laudanum to be given to alleviate his pain. Previously to my seeing him, he had been bled, had used the general warm bath, and topical fomentations.

23d. Am informed, that yesterday the purge had operated moderately, but that towards night, some difficulty of swallowing had occurred; that, however, he had been easier and rested better during the night than he had done for several nights before; that his difficulty of deglutition was considerably increased this morning. From what I could collect from the messenger, (for I did not see him to-day), relative to the state of his throat, I supposed his difficult deglutition to be owing to the common inflammatory angina, and advised a puke, detergent gargles, and a blister to the throat.

24th. Was requested to see him early in the morning; found him complaining but little of his shoulder, but totally incapable of swallowing. Am informed he had not swallowed a drop of any thing since midnight. There was no external swelling; his tonsils were slightly inflamed, but not at all enlarged; far back, about the commencement of the pharynx, an erysipelatous appearance was discernible. His speech was scarcely intelligible, and several violent attempts to swallow, were ineffectual. Complained of no pain, but of great heat at the stomach, attributed to a want of dilution;—observed his eyelids to remain half shut; and, upon inquiry, was informed, that an entire inability to move them took place soon after difficult deglutition. I observed to him, that his not being able to swallow, was owing either to a palsy of the parts concerned in deglutition, or to a closure of the œsophagus from inflammation:* he immediately remarked, and with good sense, that it must be owing to the former, for he could not at all move the parts concerned in deglutition. With a view to satisfy my mind on this subject, having tied some soft rags on the end of a limber rod, I passed it down his throat, but with an obvious resistance in the upper part of the œsophagus. Shortly after the mop was withdrawn, I desired him to try to swallow some water, which, to his great joy and surprize, he effected without much difficulty. He declared, that he felt the most agreeable sensations from the cooling effects of the water in his stomach. Just before that, being asked whether he was much thirsty, he replied, (looking round at a pail of water standing on the table), he "felt as if he could drink the whole of it." After the lapse of some little time, another attempt to swallow was ineffectual: but his throat being again *swabbed*, he was again enabled to swallow. And thus, he was enabled to swallow for twenty-four hours, by first using the mop; frequently, however, he was obliged to use it a second time before he could swallow. In general, he swallowed nothing but cool water; for, as it was with much trouble he swallowed at all, and his thirst being always great, he appeared unwilling to waste his endeavours to swallow any thing that would not satiate that appetite. Two or three times in the day, however, he was prevailed on to swallow some coffee, and he made some attempts to take a camphorated julap, with nitre and tartar emetic, but could not be persuaded to continue it, nor even to moisten the mop with it, before its introduction,—not that he was averse to the taste, but appeared to be afraid that it would, by getting into the wind-pipe, produce strangulation; and indeed his fears were not without foundation; for, in several attempts to swallow, this had happened, and had excited much distress. His pulse becoming full and hard towards evening, blood was let to sixteen ounces, which exhibited a strong buffy coat. A large blister had been drawn the night before, on his throat.

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* I am aware, that it will occur to the medical reader, that the inability to swallow, in this case, might have been, and probably was, owing to what surgeons have denominated, a *stricture* of the œsophagus; but after he has seen the issue of this case, his opinion will not, I am persuaded, differ from mine.

25th. The resistance to the passage of the mop is obviously increased, and seems to be in a progress downwards. The erysipelatous appearance in the fauces is no more discernible; has no pain; possesses no control over the organs of deglutition, except for a very short space, after motion has been given to them by the introduction of the mop. Towards evening, however, the closure of the œsophagus has been such, that he can no longer swallow by means of the mop. We now formed a leathern tube, about nine inches long, which being passed down his throat, (which was effected with the utmost ease), conveyed to his stomach any quantities of liquids it was thought proper to inject, by means of a large sponge. This evening, his pulse rising again to considerable fulness, he is bled to sixteen ounces, which exhibits no buffy coat.

26th. Last night, was very restless. To-day, the introduction of fluids into the stomach, by means of the tube and the sponge is difficult, owing, it is supposed, to the tube being too short to convey them beyond the constriction of the œsophagus; and their consequent regurgitation upon the larynx, induced very alarming strangulations. Since yesterday, no attempts have been made to give him any medicines. What we had now chiefly in view, was, to sustain the system by drinks and nourishment, and commit to nature the assistance of diseased action. From the state of the pulse, I was persuaded that the further use of the lancet was prohibited. It was generally agreed by his attendants, that, for the last twenty-four hours, he had a sufficiency of drinks and of nourishment, chiefly chicken-broth, in which bread had been boiled, and the whole afterwards strained, to sustain life very well. This evening, with a view to relieve his sense of choaking, he passes the mop down his throat every few minutes, which finds a strong resistance just within the cavity of the breast. Can no longer articulate so as to be understood, and now writes down on a slate, without seeing it, whatever he wishes to communicate. Has something of a strangury.

27th. Complains of a numbness in his limbs, which are obviously paralytic. The tube and sponge are used to-day with less inconvenience than yesterday, and he continues to use the mop frequently, to relieve the sense of choaking.

28th. A mortification is announced, by an extreme fœtor of the breath, and other symptoms usually accompanying a putrescent state of the system; and he expired about five o'clock, P. M. without a struggle, and in his perfect mind. Shortly after his death, his neck and breast were covered with livid spots.

This case is precisely similar, in the main particulars, to that of Gordon, published in the 11th number of the Eclectic Repertory, only that the paralysis was partial at first, being entirely confined to the upper eyelids, and when on the day before his death it became general, it was incomplete.

That the œsophagus may be liable to inflammation, as well as other hollow muscles of the human body, will not, I should suppose, be questioned; and that this case and that of Gordon, are instances of *œsophagitis*, will hardly be doubted; but, that cases of this kind are rare, is, I think, inferrible from the silence of Cooper, in his Dictionary of Surgery, and of Professor Munro, in his work on the Morbid Anatomy of the Alimentary Canal. The œsophagus is mentioned by the former, as being incident to stricture and paralysis, and by the latter as being liable to stricture and spasmodic contraction, of which the accession, the progress and the termination, would be different from the case above detailed.

Whether this case was the consequence of a metastasis of inflammation from the wounded shoulder, as the friends of the patient generally supposed, I will not undertake absolutely to determine; but am inclined to think, that it was induced by imprudent exposure of his neck and breast, after bathing and fomentation, during the night preceding the accession of the œsophagitis. His attendants observed to me, that he could not be induced, after emerging from the bath, to remain in bed, nor to be closely covered with a blanket. I will only further observe, that from the facility with which the tube was used in this case, it might be applied, I am entirely of opinion, with much convenience and safety, to the introduction of medicines and aliments into the stomach, in a great variety of cases, where they could not be swallowed by the patient: such as asphyxia from drowning or otherwise, in syncope, and where there is an aversion to particular medicines.

Head of Cook's Creek, near Harrisonburg,
Rockingham, (Virginia), November 4th,
1813.

ORIGINAL REVIEWS.

Description of the Retreat, an institution near York, for insane persons of the Society of Friends. Containing an account of its origin and progress, the modes of treatment and a statement of Cases. By SAMUEL TUKE. *With an elevation of the Building.* Pages 144, 12mo. Published by ISAAC PEIRCE, Philadelphia, 1813. From the 4to London Edition of 1813.

THE following extracts from the author's preface will serve to give an idea of his motives for this publication.

"At the present time, when a considerable degree of interest is excited respecting the treatment of insane persons, and when the government of our country has recently made it a subject of legislation, it is presumed that any account of existing institutions, which may throw light on the method of treating this deplorable class of our fellow creatures, will not be unacceptable to the public."

"Contemplating the loss of reason as pre-eminent in the catalogue of human afflictions; and believing that the experience of the Retreat throws some light on the means of its mitigation, and also that it has demonstrated, beyond all contradiction, the superior efficacy, both in respect of cure and security, of a mild system of treatment in all cases of mental disorder, an account of that experience has long appeared to me due to the public."

"It is much to be regretted, that we possess so few accounts of the mode of treatment, and the success of establishments, for the relief of insanity. The want of facts relative to this subject, and our disposition to hasty generalization, have led to many conclusions, equally unfriendly to the progress of knowledge, and the comfort of the patient."

"The interests of humanity and science alike call upon us to communicate freely the discoveries we make, or the failures which happen to us, in a pursuit so intimately connected with the happiness of our species. If persons engaged in the management of the insane, were more generally to publish the result of their observations, we might reasonably hope that the causes of this obscure and affecting disorder would receive some illustration. We might at least confidently expect to ascertain, with greater precision, its general laws; and, from a comparison of the modes and success of various establishments, should be able to infer the most probable means of rescuing, or relieving the unhappy victims of this disease."

We cannot but cordially subscribe to these sentiments, and at the same time express our wishes, that this interesting subject may engage the attention of our medical brethren; looking forward to as complete a change in the treatment of the insane, as has been experienced in the case of criminals, to whom this suffering part of our fellow creatures have been too much approximated.

In the two first chapters an historical account of the institution is given, followed by a description and appropriation of the grounds and house. Here the comfort and pleasant accommodation of the patients are consulted. The medical treatment follows; for a fuller account of which, as well as of the moral treatment, we refer generally to our second volume, No. V. for October, 1811, where Hints on the Treatment of Insane Persons, written by the author, before the publication of the present work, are introduced. A few extracts, however, *respecting the insensibility of the insane* are worthy our attention.

"It will be proper to observe, that the experience of the Retreat fully confirms the opinion of several respectable modern writers, that maniacs are by no means exempted from the common effects of cold: and it is to be hoped, for the sake of humanity, that the opposite opinion, alike barbarous and absurd, will be entirely exploded. The apothecary to Bethlem hospital, after stating that the patients are not exempt from the usual effects of severe cold, observes very justly: "from the great degree of insensibility which prevails, in some states of madness, a degree of cold would scarcely be felt by such persons, which would create uneasiness in those of sound mind; but experience has shown that they suffer equally from severity of weather. When the mind is particularly engaged on any subject, external circumstances affect us less than when unoccupied. Every one must recollect, that, in following up a favorite pursuit, his fire has burned out without his being sensible of the alteration of temperature; but when the performance has been finished, or he has become indifferent to it from fatigue, he then becomes sensible to cold, which he had not experienced before."

"The supporters of the absurd notion respecting the capacity of maniacs generally to resist the action of cold, also observe, that insane persons commonly endure hunger without injury. The latter sentiment is no less at variance with the experience of the Retreat than the former. Some of the patients, more especially the melancholics and convalescents, besides their four usual meals in the day, require the intermediate refreshment of biscuit, with a glass of wine or porter; and attention of this kind is considered almost essential to the recovery of many patients."

"General propositions," says Dr. Pinel, "have been too often advanced in regard to the capacity of maniacs to bear extreme hunger with impunity. I have known several, who were voracious to a great degree, and who languished, even to fainting, from want or deficiency of nourishment. Unhappy experience, which I acquired during seasons of scarcity, has most thoroughly convinced me, that insufficiency of food, when it does not altogether extinguish the vital principle, is not a little calculated to exasperate and prolong the disease."

"Insane persons generally possess a degree of control over their wayward propensities. Their intellectual, active and moral powers, are usually rather perverted than obliterated; and it happens, not unfrequently, that one faculty only is affected. The disorder is sometimes still more partial, and can only be detected by erroneous views, on one particular subject. On all others, the mind appears to retain its wonted correctness."

The author divides the moral treatment of the insane into three parts.

I. The means of strengthening and assisting the power of the patient to control the disorder.

II. The modes of coercion to be employed, when restraint is absolutely necessary.

III. The means of promoting the general comfort of the insane. "It is wise to excite as much as possible the operation of superior motives; and fear ought only to be induced, when a *necessary* object cannot otherwise be obtained."

The following striking example of the power of self-control is related.

"Some years ago, a man, about thirty-four years of age, of almost Herculean size and figure, was brought to the house. He had been afflicted several times before; and so constantly, during the present attack, had he been kept chained, that his clothes were contrived to be taken off and put on by means of strings, without removing his manacles. They were, however, taken off, when he entered the Retreat, and he was ushered into the apartment, where the superintendants were supping. He was calm; his attention appeared to be arrested by his new situation. He was desired to join in the repast, during which he behaved with tolerable propriety. After it was concluded, the superintendant conducted him to his apartment, and told him the circumstances on which his treatment would depend; that it was his anxious wish to make every inhabitant in the house as comfortable as possible; and that he sincerely hoped the patient's conduct would render it unnecessary for him to have recourse to coercion. The maniac was sensible of the kindness of his treatment. He promised to restrain himself, and he so completely succeeded, that, during his stay, no coercive means were ever employed towards him. This case affords a striking example of the efficacy of mild treatment. The patient was frequently very vociferous, and threatened his attendants, who, in their defence, were very desirous of restraining him by the jacket. The superintendant, on these occasions, went to his apartment; and though the first sight of him seemed rather to increase the patient's irritation, yet after sitting some time quietly beside him, the violent excitement subsided, and he would listen with attention to the persuasions and arguments of his friendly visitor. After such conversations, the patient was generally better for some days or a week; and, in about four months, he was discharged, perfectly cured."

"Can it be doubted, says the author, that in this case, the disease had been greatly exasperated by the mode of management? or that the subsequent kind treatment had a great tendency to promote his recovery?"

The following important observations on this subject, we trust, will be duly appreciated.

"Nor must we forget to call to our aid, in endeavouring to promote self-restraint, the mild but powerful influence of the precepts of our holy religion. Where these have been strongly imbued in early life, they become little less than principles of our nature; and their restraining power is frequently felt, even under the delirious excitement of insanity. To encourage the influence of religious principles over the mind of the insane, is considered of great consequence as a means of cure. For this purpose, as well as for others still more important, it is certainly right to promote, in the patient, an attention to his accustomed modes of paying homage to his Maker."

Respecting the modes of coercion we are told, that "coercion is considered, as the ingenious author of observations on madness, Dr. Haslam, says it should be, only as a protecting and salutary restraint. The mode of it ought to be subject to the consideration of its effect on the mind of the insane. Some means of coercion have obviously a greater tendency than others, to irritate or degrade the feelings. Hence, the use of chains has never been permitted in the Retreat. In the most violent states of mania, as the author just quoted observes, "the patient should be kept alone, in a dark* and quiet room; so that he may not be affected by the stimulus of light or sound; such abstraction more readily disposing to sleep. As, in this violent state, there is a strong propensity to associate ideas, it is particularly important to prevent the accession of such as might be admitted through the medium of the senses." The patients of this class, who are not disposed to injure themselves, are merely confined by the strait-waistcoat, and left to walk about the room, or lie down on the bed at pleasure. But in those desperate cases of melancholy, attended with tædium vitæ, in which there is a strong determination to self-destruction, it becomes necessary to confine the patient, during the night, in a recumbent posture. For this purpose the superintendant has invented a very simple apparatus, which answers all the purposes of security; and allows the patient to turn and otherwise change his posture in bed."

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* Our superintendant prefers a gloomy, to an entirely dark apartment.

"It has been suggested, that in cases of high mania, the violent excitement would be best reduced, by indulging it in the greatest practicable degree. The experience of the Retreat leads to an opposite conclusion; viz. that such a degree of restraint as would not be materially painful, in a state of calmness, has a tendency to abate the paroxysm. The association between mental and bodily action, and the degree in which the latter is well known to excite the former, sufficiently illustrate the cause of this fact."

"Except in the case of violent mania, which is far from being a frequent occurrence at the Retreat, coercion, when requisite, is considered as a necessary evil; that is, it is thought abstractedly to have a tendency to retard the cure, by opposing the influence of the moral remedies employed. It is therefore used very sparingly: and the superintendant has often assured me, that he would rather run some risk, than have recourse to restraint, where it was not absolutely necessary; except in those cases where it was likely to have a salutary moral tendency."

On the subject of employment we find the following remarks.

"As indolence has a natural tendency to weaken the mind, and induce ennui and discontent, every kind of rational and innocent employment is encouraged. The attendant will soon perceive what kind of employment or amusement is best adapted to the different patients under his care. He will observe, that those of the most active and exciting kind will be best adapted to the melancholic class, where they can be induced to engage in them; and that the more sedentary employments are generally preferable for the maniacal class. Any branch of knowledge, with which the patient has been previously acquainted, may be resumed with greater ease; and his disposition to pursue it will be encouraged by the competency which he is able to exhibit."

"I met with a striking instance of the advantage of attention to this point, some years ago. It was related to me by a person of great respectability, who was himself the subject of the case. He stated, that a few years before that time, his mind had been greatly depressed without any apparent cause. The most dismal thoughts continually haunted his mind; and he found the greatest difficulty in confining his attention, for the shortest time, to one subject. He felt entirely indifferent to his business and his family: and, of course, he neglected them. It was with great difficulty he was induced to take sufficient food to support life. His body became emaciated, and his mind more and more enfeebled."

"In this state, as he was one day musing upon his miserable condition, he perceived, by the faint glimmerings of remaining reason, the still worse state to which he must be reduced, if he continued to indulge his gloomy reflections and habits. Alarmed with the prospect of the future, he resolved to exert the power which he still possessed to control his unhappy dispositions, and to regain the habit of attention. For this purpose he determined immediately to apply himself to mathematics, with which he had been well acquainted in his youth, and also to adopt a more liberal regimen."

"The first attempt to go through the easiest problem, cost him indescribable labor and pain. But he persisted in the endeavour; the difficulty of fixing his attention gradually lessened; he overcame his tendency to abstinence, and very shortly recovered the use of his faculties and his former temper of mind."

"Perhaps few persons, in the situation which I have described, would have had the courage to form such resolutions; and still fewer, the fortitude to perform them. The case, however, certainly points out what may possibly be done; and how important it is, in a curative point of view, to encourage the patient in steady mental pursuit."

We shall conclude this interesting article, with the comparative account of the result of the treatment of the insane, in different institutions.

"It appears, that, from the opening of this institution, in the year 1796, to the end of the year 1811, one hundred and forty-nine patients have been admitted. Of this number only sixty-one have been recent cases. Thirty-one patients have laboured under mania; of whom,

2 have died,
6 remain in the house,
21 have been discharged perfectly recovered, and
2 so much improved as not to require further confinement.

The old, or what are usually termed, incurable cases, which have been admitted, consist of sixty-one of the maniacal, twenty-one of the melancholic class, and six cases of dementia. Of the former,

11 have died,
31 remain in the house,
5 have been removed by their friends, improved,
10 have been discharged perfectly recovered, and
4 so much improved, as not to require further confinement.

Of the twenty-one melancholics,

6 have died,
6 remain in the house,
1 has been removed by the friends of the patient, somewhat improved,
6 have been discharged perfectly recovered, and
2 so much improved, as not to require further confinement.

Of the six cases of dementia,

2 have died,
2 have been discharged as not suitable objects, and
2 remain in the house."

"The present master of St. Luke's Hospital, stated, in the year 1807, before a select committee of the House of Commons, on "the State of Lunatics," that the average number of curable patients, admitted annually, is as follows: Males, 110. Females 153. Total 263. The number discharged are as follows: Cured, males 37. Females 71. Total 108. Uncured, males and females 100. Unfit from various causes, 28. Dead, 27."

"Dr. Haslam, the apothecary to Bethlem Hospital, states, that in the period of ten years, from 1784 to 1794, 1664 patients were admitted; of whom 574 were discharged cured, and 1090 uncured. It appears also, from the same authority, that, "in the course of the last twenty years, seventy-eight patients," who had been ill more than twelve months, have been received, of whom only one has been discharged cured.

This patient, who was a woman, has since relapsed twice, and was ultimately sent from the hospital uncured."

"The same author informs us, that "patients who are in a furious state, recover in a larger proportion than those who are melancholic. An hundred violent, and the same number of melancholic cases, were selected: of the former, sixty-two were discharged well; of the latter, only twenty-seven. Subsequent experience has confirmed this fact."

"We learn from an interesting paper, by Dr. Pinel, in the Journal de Physique, that in the hospital de la Salpêtriere in France, 1002 patients were admitted, in three years and nine months; of whom 473 were discharged, cured. It is proper to state, that of the 1002 patients, 388 had been previously under care in other hospitals; and it does not appear certain that the rest were all of them recent cases."

Elements of Physiology; by A. Richerand, Professor of the Faculty of Medicine of Paris, Surgeon in Chief of the Hospital of St. Louis, Member of the Academies of Vienna, Petersburgh, Madrid, Turin, &c. From the fifth London edition, revised, corrected, and enlarged.—Γνῶθι σεαυτόν.—Translated from the French, by G. J. M. De Lys, M.D. Member of the Royal College of Surgeons in London. *With Notes*, by N. Chapman, M.D. Professor of the Materia Medica in the University of Pennsylvania.—Philadelphia: published by Thomas Dobson. 1 vol. 8vo. pp. 609.

No branch of knowledge is more interesting than the science which explains the functions of animated beings. The physician must possess very inadequate conceptions respecting the nature of diseases, who has not previously acquired some acquaintance with the healthy actions of our bodies. Hence, the phenomena of life have ever engaged the attention of the more enlightened professors of the healing art. Though many of the minute, yet essential operations of the animated machine still remain unexplained, we believe it will be readily conceded, that physiology has made rapid advances of late years. This improvement has been the result of careful observation, and of diligent investigation by experiment, the history of which has been recorded in the various periodical works of the last thirty years. To search these records is a task too tedious and too laborious, for those who are not solicitous about details, but who wish to be informed of general results. An elementary treatise, containing the amount of what has been ascertained, together with the conclusions which may be fairly drawn from authenticated observations and experiments, will prove at this period a very acceptable work. Surrounded by characters deeply engaged in physiological inquiries, himself long known as a teacher of the science, Richerand must be deemed fully qualified for the task. The American edition has been enlarged with notes; some intended to confirm the doctrines laid down by the author, others proposed as grounds for the editor's dissent; presented, as we think, with candour and intelligence.

In the language of the author, "every animal may be considered, in extreme abstraction, as a nutritive tube, open at the extremities;* the whole existence of the polypus seems reduced to the act of nutrition, as its entire substance is employed in the formation of an alimentary tube, of which the soft parietes, extremely sensible and contractile, are busied in appropriating to themselves, by a sort of absorption, the substances which are brought into it. From the worm up to man, the alimentary canal is a long tube, open at the extremities; at first, only of the length of the body of the animal, not bent at all in passing from the head to the tail, and carried on towards the mouth, and towards the anus, with the external covering of the body, but soon returning upon itself, and stretching out into length, far beyond that of the body which contains it."

"It is in the thickness of the parietes of this animated tube, betwixt the mucous membrane that lines it inwardly, and the skin with which this membrane is continuous, that all the organs are placed, which serve for the transmission and elaboration of fluids, together with the nerves, the muscles, in short, all that serves for the carrying on of life. As we rise, from the white-blooded animals, to the red and cold-blooded, from these to the warm-blooded, and from these to man, we see a progressive multiplication of the organs that are contained within the thickness of the parietes of the canal:—if we follow, on the other hand, the descending scale, we see this structure gradually simplified, till we arrive at last at the polypus, and find in it only the essential part of animal existence. The simplicity of its organization is such, that it may be turned inside out, and the external be made the internal surface; the phenomena of nutrition, which are the whole life of the animal, go on, from the close analogy between the two surfaces; unlike to man and the greater part of the animals, in whom the skin and mucous membranes, though growing into each other, though linked by close sympathies, are far from possessing a complete analogy of structure, or a capacity for the interchange of functions."

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* "*Lacépède*, Histoire Naturelle des Poissons, tom. 1. There may be brought, against this principle, the instance of some zoophytes, such as spunges, &c.; but do these bodies really belong to the animal kingdom? and should not we be warranted in rejecting them, by the want of the alimentary cavity, the essential characteristic of animal existence?"

"Man, then, and the whole animal kind, carry about within themselves, the supply of their subsistence, and absorption, by an inward surface, is their distinguished characteristic. It is inaccurate to ascribe to Boerhaave, the comparison of the digestive system of animals, to the soil in which plants suck up the juices that feed them, and the chylous vessels, to real internal roots. I find the same thought well expressed in the work on humours, which, justly or falsely, bears the name of Hippocrates. *Quemadmodum terræ arboribus, ita animalibus ventriculus.*"

"The digestive tube, that essential part of every animal, is the part of which the existence and action are the most independent of the concurrence of the other organs, and to which the properties of life seem to adhere, if one may say so, with most force. Haller,* who has made so many and such interesting inquiries into the contractile power of the muscular organs, examining them under the two-fold relation of their irritability, as it is more or less lively, or more or less lasting, looks on the heart as the one in which these two conditions are found in the highest combination. He gives the second place to the intestines, the stomach, the bladder, the uterus, and the diaphragm, and, after these, all the muscles under the command of the will. I had at first admitted, with every other writer, this classification of the contractile parts; but more than an hundred experiments on living animals have satisfied me, that the intestines are always the last part in which the traces of life may be discovered. Whatever may be the sort of death by which they are destroyed, peristaltic motions, and undulations, are still continued in this canal, while the heart has already ceased to beat, and the rest of the body is all an inanimate mass. M. Jurine had already observed on the pulex monoculus, that, of all the parts of the body of this little white-blooded animal, the intestines were the last to die."

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* *Opera minora*, 3 vol. 4to.

"If the intestinal tube be the *ultimum moriens*, if it be the last organ in which life lingers and goes out, it is to it we ought to direct, in preference, the stimulants that are capable of recalling it in case of asphyxia. I think that, after the blowing of pure air into the lungs, the means that ought next to be attended to, is the injection of acrid and irritating clysters, thrown in with force. The large intestines are connected with the diaphragm by a close sympathy, as is proved by the phenomena of fæcal evacuation: the irritation of them is the surest means of accelerating it; and this irritation is the easier, as the alimentary canal is the last part that is forsaken by life."

Having taken this view, digestion naturally occupies the first place in the treatise, and here we shall introduce the words of the author.

"It is now pretty generally admitted, that digestion in the stomach, consists in the solution of the food in the gastric juice. This powerful solvent penetrates, in every direction, the alimentary mass, removes from one another, or divides its molecules, combines with it, alters its inward composition, and imparts to it qualities very different from those which it possessed before the mixture. If, in fact, a mouthful of wine or of food is rejected, a few minutes after being swallowed, the smell, the flavour, all the sensible and chemical qualities of such substances, are so completely altered, that they can scarcely be recognized; the vinous substances turned, to a certain degree, sour, are no longer capable of the acetous fermentation. The energy of the solvent power of the gastric juice, perhaps over-rated by some physiologists, is sufficient to dissolve and to reduce into a pulp, the hardest bones on which some animals feed. It is highly probable, that its chemical composition varies at different times; that it is acid, alkaline or saponaceous, according to the nature of the food. Although the gastric juice be the most powerful agent of digestion, its solvent power requires to be aided by several secondary causes, as warmth, which seems to increase, and in a manner, to concentrate itself in the epigastric region, as long as the stomach is engaged in digestion; a sort of inward fermentation which cannot be, strictly speaking, compared to the decomposition which substances subject to putrefaction and acescency undergo. The gentle and peristaltic action of the muscular fibres of the stomach, which press, in every direction, on the alimentary substance, performs on it a slight trituration, while the moisture of the stomach softens and macerates the food, before it is dissolved; one might therefore say, that the process of digestion is at once chemical, mechanical, and vital; in that case, the authors of the theories that have been broached, have been wrong, only in ascribing to one cause, such as heat, fermentation, putrefaction, trituration, maceration, and the action of the gastric juice, a process which is the result of a concurrence of these causes united."

"The food remains in the stomach, during a longer or shorter space of time, according as, by its nature, it yields more or less readily to the changes which it has to undergo. Gosse of Geneva, ascertained, by experiments performed on himself, that the animal and vegetable fibre, concrete albumen, white and tendinous parts, paste containing fat or butter, substances which have either not undergone fermentation, or which do not readily undergo that process, remain longer in the stomach, and offer more resistance to the gastric juice, than the gelatinous parts of animals or vegetables, fermented bread, &c.; that the latter required but an hour for their complete solution, while the former were scarcely dissolved at the end of several hours."

"XXI. The following case throws, I think, some light on the mechanism and importance of the action of the stomach in digestion. The patient was a woman whom I had frequent opportunities of examining at the "Hôpital de la Charitè" at Paris, in the clinical wards of Professor Corvisart, in which she died on the ninth Nivose of the year X. after six months' stay in the hospital."

"A fistulous opening of an oval form, an inch and an half in length, and upwards of an inch in breadth, situated at the lower part of the chest, at the upper and left side of the epigastric region, afforded an opportunity of viewing the inner part of the stomach, which, when empty of food, appeared of a vermilion colour, was covered with mucus, its surface wrinkled over with folds about half an inch deep, and enabled one to distinguish the vermicular undulations of these folds, and of all the parts which were in sight. The patient, who was then forty-seven years of age, had had this fistula since she was in her thirty-eighth year. Eighteen years before, she had fallen on the threshold of a door, and the blow had struck against her epigastric region. The place remained affected with pain, and she became incapable of walking or of sitting, otherwise than bent forward and to the left side. At the end of this long interval, a phlegmonous and oblong tumour appeared on the injured spot; during the nausea and vomiting which came on afterwards, the tumour broke and there escaped at the wound, which was left by this rupture, two pints of a fluid which the patient had just swallowed to obtain relief. From that time, the fistula, which at first would scarcely have admitted the tip of the little finger, increased daily; at first it allowed only the fluids to pass, but, on the eighth day, the solid food came away freely, and continued to do so till she died. When admitted into the hospital, she ate as much as three women of her age, she voided about a pint of urine and went to stool only once in three days. Her fæces were yellowish, dry, rounded, and weighed more than a pound. Her pulse was very feeble and extremely slow, its pulsation scarcely exceeding forty-five or forty-six beats in a minute. Three or four hours after a meal, an irresistible desire obliged her to take off the lint and compresses with which she covered the fistulous opening, and to give vent to the food which her stomach might happen to contain; it came out rapidly, and there escaped at the same time, and with a noise, a certain quantity of gases. The food thus evacuated, exhaled an insipid smell, was neither acid nor alkaline, for, the chymous and grayish coloured pulp into which they were reduced, when suspended in a certain quantity of distilled water, did not affect vegetable blues. The digestion of the food was far from being always complete; sometimes, however, the smell of wine could not be recognized, and the bread formed a viscid, thick and soft substance, pretty similar to fibrine newly precipitated by the acetous acid, and it floated in a tenacious liquid of the colour of common broth."

"It follows from the experiments performed at the Ecole de Médicine, on these half digested substances, and on the same before their admission into the stomach, that the changes which they undergo, consist in the increase of gelatine, in the formation of a substance which has the appearance of fibrine, without having all its qualities, in a greater proportion of muriate and phosphate of soda, as well as of phosphate of lime."

"This patient was unable to sleep, till she had emptied her stomach, which she cleared by swallowing a pint of infusion of chamomile. In the morning, there was seen in the empty stomach, a small quantity of a ropy frothy fluid, like saliva. It did not turn vegetable blues to a green or red colour, was not homogeneous, but exhibited particles of some degree of consistence, among the more fluid parts, and even albuminous flakes completely opaque. The experiments performed on this fluid, showed that it bore a considerable analogy to saliva, which, however, is rather more liable to putrefaction."

"The vermicular motion by which the stomach cleared itself of its contents, took place in two different, but not in opposite directions; the one pressing the food towards the fistulous opening, the other towards the pylorus, through which the smaller quantity was allowed to pass."

"On opening the body, it was found, that the fistula extended from the cartilage of the seventh left rib, as high as the osseous termination of the sixth; its edges were rounded, and from three to four lines in thickness; they were covered with a thin moist skin, of a red colour, and similar to that of the lips. The peritoneal coat of the stomach adhered so firmly to the peritoneum lining the fore part of the abdomen, around the opening, that the line of adhesion would not be observed. The opening was in the anterior part of the stomach, at the union of the two-thirds on the left side, with the third on the right of that viscus; that is, about eight fingers' breadths from its greater extremity, and only four from the pylorus. It extended from the greater to the lesser curvature. In other respects, it was the only organic affection of that viscus."

"It should be stated, that for several years, the patient had been thin and emaciated, and had led a languid life, which was terminated by a colliquative diarrhœa. She seemed to be supported only by the small quantity of food which passed through the pylorus, into the duodenum, where it received the influence of the bile, whose action on the chyme is, as we shall presently state, absolutely essential to the separation of the nutritious parts. Not that there was any thing to prevent the absorbents of the stomach from taking up a certain quantity of nutritious particles, but that small quantity of food, in an imperfect condition, was of very little service in imparting nourishment, and, in that respect, she was in similar circumstances to patients who are affected with obstruction of the pylorus, and reject the greater part of their food, when, digestion being over, this contracted opening can no longer allow any food to pass."*

The second chapter is on absorption; from which we shall venture to present the following extract, as affording a curious speculation in pathology. "The absorbents differ, likewise, from the bloodvessels, in their singularly tortuous course, their frequent communications, and especially in their unequal size in different parts of their extent. An absorbent of very small dimensions, frequently enlarges, so as to equal in size the thoracic duct, then contracts, and again bulges out, though in the length of the vessel in which these differences of size may have been noticed, it may have received no collateral branches. The lymphatics, when completely filled with quicksilver, appear to cover the whole surface of our organs: and the whole body seems enveloped in a net-work of close and small meshes. The metastasis of humours, from one part of the body to another at a distance, is easily understood by any one who has seen those numerous inosculations rendered manifest by injection. Metastasis ceases to be an inexplicable phenomenon; one has no difficulty in conceiving how, by means of the lymphatics, all the parts of the body communicate freely; how, fluids absorbed by those vessels in one part, may be conveyed into another, and pervade the whole body, without following the circuitous route of the circulation, and that it is, therefore, not altogether impossible, however improbable, that fluids taken into the stomach, may be conveyed directly from the stomach to the bladder, and that, in the same manner, the milk of the intestinal canal may find its way into the breasts; and that pus may be removed from the place in which it is collected, and be conveyed to the place to which irritation calls it forth. All that Bordeu has said of the oscillations and currents of humours, through the cellular texture, in his "*Recherches sur le Tissu muqueux*," may be equally explained by the anastomosis of the lymphatics."

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* "Cases, in many respects, similar to the above, are recorded by different writers.

"Haller, in his "Chirurgical Dissertations," has the history of a woman with an aperture in her stomach, through which she was nourished for *twenty-seven years*. For other instances of fistulous openings in this viscus, consult the "Irish Transactions," and "Medical Facts and Observations." —Ed."

"A young man whom I had ordered to rub in mercury along the inner part of his left leg and thigh, for the cure of a pretty large bubo, was affected, on the third day, with salivation, though he used only half a dram of ointment at each friction. The salivary glands of the left side were alone swollen, the left side of the tongue was covered with aphthæ, and the right side of the body remained unaffected by the mercurial action; a clear proof, that the mercury had been carried to the mouth, along the left side of the body, without entering into the course of the circulation, and perhaps, without passing through any of the conglobate glands; for, that of the left groin, which alone was swollen, did not sensibly diminish in size. Salivation may, therefore, take place in the cure of venereal disease, though none of the mercury enter the circulation; which warrants the opinion, that the action of syphilis, as well as of the remedies which are administered for its removal, operates chiefly on the lymphatic system."

In the third chapter, which is on the circulation, our attention was arrested by the following observation and experiment, which having a relation to the nature and cause of aneurism, we deem any apology for the insertion as unnecessary. "Of the three coats which form the parietes of the arteries, the fibrous, though thicker than the other two, offers, however, the least resistance. If you take the carotid artery, which, for a considerable space, does not send off any branches, and forcibly inject into it a fluid, the internal and middle coat will be torn, before dilatation has increased, by one half, the caliber of the vessel. The external coat resists the cause of rupture by dilating, and forms a tumour, and it is only by applying a pretty considerable force, that it can be ruptured. The experiment is attended with the same success, if performed with air or any other gas. In aneurism, the internal and fibrous coats of the arteries, but more particularly the fibrous, are ruptured at an early stage of the disease, which at that period increases suddenly, in a very rapid manner; and on opening the tumour, it is observed, that the sac is entirely formed by the dilated cellular coat. Take an artery of a certain caliber, for example, the carotid or humeral, apply a ligature around it and tighten it with some degree of force. Dissect and take out the vessel, then cut the thread, and examine the place to which it was applied; you will observe, that the parietes of the artery are in that part thinner, and formed merely by the cellular coat, which alone has withstood the constriction. Take hold of the two ends of an insulated arterial tube and stretch it, then examine its inner coat, and you will find it torn and cracked in several places, and the parietes of the artery evidently weakened."

"This want of extensibility in the coats of arteries, is the principal cause of aneurism; hence the popliteal artery is so liable to that affection, from its situation behind the knee, whose extension is limited merely by the resistance of the posterior tendons and ligaments; this artery is affected by the jar which takes place through all the soft parts, when the leg is violently extended; and being less extensible than the other parts, its inner coat is ruptured, or at least weakened, so as to occasion an aneurism, always rapid in its progress. Of ten popliteal aneurisms which I have seen in different hospitals, eight were ascribed to a violent extension of the ham. In looking over the cases that have been recorded, it will be seen, that a considerable number of aneurisms of the aorta have been occasioned by too forcible and too sudden an extension of the trunk in raising a heavy burthen."

The author has assigned to the vena azygos, an use which appears to us novel; it is as follows. "As the inferior vena cava passes through the lower edge of the liver, whether along a deep fissure, or in a real canal in the parenchymatous substance of that viscus, the course of the blood must be impeded, when, from congestion of the parenchyma, the vessel is, in some sort, strangulated."

"Obstruction of the liver, which is of such frequent occurrence, would be attended with fatal consequences, by preventing the return of the blood from the inferior parts, along the ascending cava, if this great venous trunk did not keep up, by means of the vena azygos, an open and free communication with the descending or superior cava. The use of this anastomosis of the two great veins is, evidently, to facilitate the passage of the blood from the one of these vessels into the other, when either, especially the lower, does not readily evacuate its contents into the right auricle. On this account, the vena azygos is capable of considerable dilatation, and is entirely without valves. In the body of a man opened this day in my presence, and whose liver was twice as large as in health, I observed, that the vena azygos, which was distended with blood, was of the size of the little finger; the termination downward of this vessel, in the right renal vein, and above in the superior cava, were most distinct, and by compressing it from above downward, or from below upward, the blood flowed into the one or other of these vessels."

Respiration, secretion, and nutrition occupy the three succeeding chapters, which concludes the functions which are subservient to the preservation of the individual, by assimilating to his substance the food by which he is nourished.

The functions which tend to the preservation of the individual by establishing his relations with the beings that surround him, comprehending sensation, motion, voice and speech, are next considered by the author. Afterwards he takes a view of the functions subservient to the preservation of the species. The work closes with a chapter containing the history of the ages, the temperaments, and the varieties of the human species, of death and putrefaction. But this analysis has already been extended to considerable length; to those who would enter more fully into its merits, we must recommend the perusal of the work.

Elements of Surgery, for the use of Students, with plates. By JOHN SYNG DORSEY, M.D. Adjunct Professor of Surgery in the University of Pennsylvania, one of the Surgeons of the Pennsylvania Hospital, &c. in two vols. 8vo.—Motto,

> ———— for want of timely care,
> Millions have died of medicable wounds. ARMSTRONG.

Philadelphia, published by Edward Parker, and Kimber & Conrad, 1813.

IT affords us, at all times, pleasure to announce the publications from the American press. When they can, in any degree, be considered as the labours of our countrymen, we have a greater pride and satisfaction in presenting an analysis to our readers. The claims of the present author cannot be better expressed than in the following words, taken from his preface. "I take the opportunity of disclaiming, except in a few instances, all pretensions to originality. I have availed myself freely of the writings of preceding authors, and my extracts are, in many instances, of very unusual length. The only apology I shall offer for this liberty, is, that I have considered it the more useful and honest method of communicating information. Having made this acknowledgment, I shall now state, that I believe there will be found in the following work, many observations of practical importance, which are not contained in any other. These, I principally owe to my connexion with Dr. Physick, and a careful attention to his practice during a period of fifteen years."

"In the succeeding pages, my chief attention has been directed to practical precepts, and these I have endeavoured to deliver with clearness; I am not without a hope, that they will prove not only useful to medical students, but also to country practitioners, and to the younger surgeons in the navy and army."

The work is introduced with some observations on inflammation and simple incised wounds; short and concise, yet containing such general aphorisms as are requisite to guide the practitioner in their treatment. In explaining the nature, symptoms, and treatment of fractures and dislocations, the author has availed himself of the labours of Desault, and Boyer, particularly of the latter, from whom he has made copious extracts. They are judicious, and unquestionably from good authority. When treating of injuries of the head, the author has presented the following observations, which appear to us interesting, and not generally known.

"In addition to the usual effects of blows, in which the scalp is chiefly concerned, a severe pain sometimes remains for a great length of time after the accident. I know of no remedy for this terrible complaint, which happily is of rare occurrence, but which in severity and obstinacy is surpassed by no local pain. Coldbathing, sea-bathing, mercury, copious bleedings, blisters, issues, purging, emetics, all the narcotics, and numerous other remedies, have been used in some instances, without any effect. The incision down to the bone should be tried, as it has in some cases produced immediate relief."

The history of the symptoms attendant on concussions of the brain, and on fractures of the skull, is chiefly drawn from Abernethy and Pott. The author has, however, shown, that he has been a careful observer, and in addition to the causes of hernia cerebri hitherto announced, he has, in our opinion, very correctly stated, that this protrusion may be occasioned by the pressure of contained pus.

The operation of trepanning is described in very clear and concise terms, and evince, that the author might, if he had not been directed by other views, with success have engaged in writing from his own knowledge, instead of compiling from the works of others.

The various diseases of the eye, occupy the next place in the work. The author has ranged himself with the advocates for the extraction of cataract, in preference to couching. The arguments he has adduced, are drawn from Wenzel, and have been repeatedly before the public. Scarpa and Hey, no mean authorities, have not hesitated to prefer depression. Accordingly, the author has, with great propriety, given a description of both operations, taken from Wenzel and Scarpa, respectively.

The following mode of operating for umbilical hernia, appears to possess some peculiar advantages, as it affords the operator an opportunity of making a full examination of the protruded viscera by a free opening of the sac, and the danger of peritoneal inflammation, from this opening, is precluded by the ligature which occasions the closure of the neck of the sac, and prevents the exposure of the abdominal viscera. It has been proposed by Dr. Physick, though never performed by him. Dr. Wistar, the author states, has performed it with complete success.

The operation "consists in making a crucial incision through the integuments of the tumour, and dissecting the four angles thus formed down to the neck of the sac; an opening is next to be made into the sac at its upper part, of a sufficient size to afford a view of its contents; should these be sound, they are to be reduced if practicable, without dilating the umbilical aperture; but if this cannot be done, that aperture is to be enlarged outside of the sac. When the contents of the sac are reduced, a ligature is to be tied round its neck."

When describing the different modes recommended for the cure of stricture of the urethra, we think the author of the Elements has not been historically correct in considering Mr.

Hunter as the first who suggested the application of caustic for this purpose. It was unquestionably practised in the sixteenth century, as may be ascertained by a reference to Saviard's Surgery. The operation had probably been unskilfully performed on some occasions, as Saviard does not hesitate to give it his decided disapprobation. At this moment we have no opportunity of ascertaining the exact process adopted at the period alluded to.

Ambrose Paré, who was surgeon to Henry the IVth of France, about an hundred years before the foundation of Philadelphia, has given, in a work published by him, representations of instruments employed for the division of strictures, at that time termed caruncles in the urethra. The engravings are very rudely executed, and the instruments may have been but badly fashioned. Whatever improvements in the form of the instrument have been suggested by Dr. Physick, who has probably overlooked the claims of Ambrose Paré, the merits of the invention must be ascribed to the French surgeon.

In the operation for lithotomy, the advantages of Dr. Physick's improved gorget will readily be admitted by every one who has occasion to operate for stone in the bladder; and a plate, with a minute description of the instrument, are with great propriety given in the Elements of Surgery.

The operation of tying the artery, as proposed by Mr. Hunter, for the cure of aneurism, with the successive improvements suggested by Messrs. Abernethy and Henry Cline, has been performed on this side of the Atlantic. In our number for October, 1811, we published a case of inguinal aneurism, successfully treated by tying the internal iliac artery above Poupart's ligament. We were favoured with this history by Dr. Dorsey, by whom the operation was performed. Besides this case, the author has introduced into his Elements of Surgery, "a case in which the carotid artery was tied up successfully, by Dr. Post, of New York, a gentleman long distinguished as one of our ablest surgeons." They are both happy specimens of surgical skill, and would reflect honour on the profession, wherever surgery is the most successfully cultivated.

The author of the Elements mentions, "that a remedy for spina bifida is still to be considered a desideratum." In the 12th number of the Eclectic Repertory, we gave some cases of spina bifida, drawn up by Mr. Astley Cooper. One was radically cured by puncturing the tumour with a needle, and then subjecting it to pressure by means of a flannel roller. Should this operation fail of success, Mr. Cooper proposes the application of a suitable truss to support the integuments, and thereby prevent the rupture of the tumour always attended with fatal consequences.

Before we close this review, we cannot pass unnoticed, the engravings designed and executed by Dr. Dorsey, in a style which does credit to his taste, and skill in the graphic art. To those who have not a ready access to medical libraries, we recommend the Elements of Surgery as a valuable compendium of the most approved practice in that branch of the healing art.

A Dissertation on the Natural History and medicinal effects of the Secale Cornutum, or Ergot. By Oliver Prescott, A. M. 8vo Pamphlet, pages 16.

The sufferings attendant on parturition, have, in every period, excited the liveliest sympathy. Whatever can tend to alleviate these sufferings, or contribute to accomplish this important process, by renewing the powers of the uterus, when its contractions have ceased, can not fail of being cordially received by the profession. Impressed with these sentiments, we venture to lay before our readers, a copious extract from this pamphlet, presenting entire the observations which the author has collected respecting the medicinal virtues of the ergot or secale cornutum.

"Some few empirics, however, it is said, have long known that the ergot would expedite lingering labour. But these ignorant pretenders bestow upon their nostrums so extravagant encomiums, and their impositions upon the credulity of the public are so numerous and frequent, that no credit whatever can be attached to their recommendations. Most of their mighty secrets, when disclosed, prove altogether inert; or at best very incompetent to effect the purposes for which they are intended. Their powder, to promote delivery, was consequently derided, and was thought by the faculty to be unworthy of serious attention or regard.

"The first information the public received, from a source entitled to credence, that this production was, in reality, endued with such unexampled property, was through the medium of the New York Medical Repository,* by a letter from Dr. J. Stearns to Dr. Akerly. In this communication, Dr. Stearns designates it by the appellation of *pulvis parturiens.*

"Very soon after this publication, I procured a sufficient quantity for experiment, and have since frequently used it. With very few exceptions, its uniform effect is to stimulate the uterus to increased action, when administered in parturition. But I cannot say with Dr. Stearns, "I have never been disappointed in my expectations of its effects;" for I met this disappointment in the very first case in which I prescribed it. In that case, a neighbouring physician was attending the patient, the travail had progressed slowly, but in a regular manner, until the head of the fœtus was detruded so low in the pelvis, that the ear was perceptible to the touch, when the pains subsided, and had entirely ceased, some hours before I was summoned. One drachm was administered, in the form of decoction, at three separate doses, but without producing any effect, when the delivery was accomplished by the aid of the *forceps.*

"Two similar cases have since occurred, in which the pains had totally ceased, toward the termination of labour, and in which parturient efforts could not be revived, by any quantity I thought prudent to administer. In one of these last, the patient took the decoction of more than two drachms in divided doses.

"In four other patients, I had reason to doubt whether the pains were increased by its use, either in frequency or strength;

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* Vol. ii. p. 308.

but one dose only was given to either of them, for the irritable state of the stomach prevented its being repeated.

"In every other instance, without exception, the effects of this prescription have been such as fully to demonstrate its powers "*ad partum accelerandum.*" The pains produced by it, when a full dose is given, are very peculiarly forcing, and the contractile effort of the uterus continues to that degree, that the fœtus is not suffered to retreat, but remains firmly retained where the last exacerbation of pain left it, until it recurs again. This incessant action will continue, if the delivery is not effected, for an hour or more; and when it subsides, the medicine, again given, will reproduce the same effects.

"The frequency and violence of the uterine efforts, induced by the ergot, are not more extraordinary, than is its almost instantaneous operation. In twenty cases, I carefully noticed the precise time it required, to produce its customary effects. In two of them, the increased strength of the pains, and the continued action commenced in seven minutes from the time the decoction was taken; in one case it was eight minutes, in seven it was ten, in three, eleven, and in three others it was fifteen minutes. In the four remaining cases, there was no apparent operation until twenty minutes had expired. In other cases, the time was not particularly noticed; but as the twenty I have given were nearly in succession, it is probable they will show the proportion, as accurately, as if the time in all had been precisely ascertained.

"From this account of the manner in which the ergot usually operates, it will be readily conceived, by those who have not witnessed its effects, that it is a powerful agent, which requires prudent direction; but when properly applied, will be highly useful, many times, to shorten a process, which, unaided, would prove extremely tedious and troublesome.

"Before I had acquired sufficient experience of its effects, I imprudently used it once or twice when the pains were tardy and feeble, even in first labour, before the orifice of the uterus was much relaxed or dilated; it having been recommended to "produce all the beneficial effects of bleeding without inducing the debility." But it does *not* usually prove relaxing to the rigid fibre; its operation, therefore, subjected the patients to much unnecessary suffering. In one instance, no perceptible progress was made, by the continuance of forcible uterine efforts, during the space of an hour.

"It is therefore important, even if the pains are feeble and unfrequent, to delay giving this stimulating drug, until considerable dilatation has taken place; to leave the business in its early stages to the slow and regular process of nature; and by the respite thus gained by the intervals from pain, preserve the strength and resolution of the patient for later and more painful efforts.

"But if the labour should be long protracted, from the irregular action of the uterus, or the rigidity of the muscular fibres, these obstacles should be first removed by venesection; after which the ergot may be usefully employed, and its operation will be found mild and efficacious. But whenever recourse is had to venesection, the depletion should be copious, and the blood suddenly drawn from a large orifice; for no possible advantage will be gained by this operation, upon a plethoric subject, if the quantity taken be less than twenty ounces; and I have repeatedly taken thirty, before the necessary end could be accomplished.

"I have never administered ergot in substance, but always in the form of decoction, in the proportion of half a drachm to four ounces of water, of which one third is taken at a time; if the pains are not sufficiently augmented in twenty minutes, then half the remainder is given; but a second dose is rarely required.

"It will probably be found more beneficial in many cases to diminish the quantity to one large table spoonful, which, taken every ten minutes, will have the effect to increase the vigour of the pains, without producing such excessive and constant action, as is usual when the full dose is administered. I have lately directed it in this manner, and have been so much gratified with its more temperate, though efficient action, that I shall hereafter prefer the smaller to the larger quantity.

"It has been suggested, by a writer in the New England Journal of Medicine and Surgery, that the death of the infant is a more frequent occurrence, in cases in which the ergot has been employed, than where its agency has not been used. If this is indeed the case, it forms at once an insuperable objection to its use, except in cases where its safety is well defined; and the subject certainly demands deliberate attention and serious inquiry. For myself, it is, I conceive, rather questionable, whether more injury would result to the child "from unceasing pressure for several minutes, and occasionally for half an hour or more," than for a much more tedious process, in which the pressure is reiterated, and the head permitted to retreat after each successive effort. But, in a matter of such importance, we ought not to be governed by conjecture; but should adopt or reject it, as its beneficial or destructive operation is tested by experiment. My own experience has been such, as to persuade me, that the above suggestion is unfounded. It is true, that in twenty-two cases of first labour, in which this medicine had any effect, I lost four children, and in thirty-five where it was given to women, who had been previously delivered, I have lost one. But all these deaths were attended with such circumstances, as fully to exculpate the ergot from any agency in the event. And when it is recollected that this medicine is not used, except in cases that are long protracted, or are likely to prove tedious and troublesome, it will not be thought, I conclude, that this unfortunate event happened more frequently, or in greater proportion to the whole number of cases, than might reasonably have been expected, had this medicine not been prescribed.—But exclusive of any injurious effects, which may result to the infant, the ergot requires much more caution with respect to its use, in cases of first labour, than in others: for, owing to the usual tension and rigidity of the parts, the protruding progress will not be accelerated, in any reasonable proportion to the additional pain and suffering it produces. It is also too active and powerful an agent, to be safely directed by an ignorant or unexperienced accoucheur; and before dismissing the subject, I most cordially join in cautioning those, who have not been in the practice of using it, and witnessing its operations, to be wary how they employ its agency, until the muscular fibre is properly relaxed, and the *os uteri* considerably dilated. This caution is also more especially necessary, if they are not positively certain that the presentation is natural, as well as "that there are no preternatural obstructions, to prevent delivery; as the violent pain, and almost incessant action, which it frequently induces, in the uterus, precludes the possibility of turning" the fœtus.

" Dr. Beekman is said to have succeeded in a case of amenorrhœa, by giving one drachm of the ergot in decoction. In consequence of this recommendation, I tried its effects in one case of partial obstruction, by giving it, first in a dose of one drachm; at the next period the same patient took two drachms, but without the desired effect. And from analogy, I should conclude, that it was unadapted to this complaint. The tendency of its operation is, I conceive, to constringe the uterine fibres, and lessen the caliber of its bloodvessels; for, when given to parturient patients, there has been no instance, within my knowledge, of undue hemorrhage after delivery, although several, who have taken it, had been previously accustomed to profuse discharges. The lochia also, have occasionally been so much diminished, after its use, as to excite apprehension for the event. In two cases, this discharge entirely ceased, on the second or third day after delivery, and did not reappear during the month; but no puerperal complaint was induced, nor was their recovery delayed by this incident.

" The uniform operation of the ergot to restrain uterine hemorrhage, has been noticed by other physicians. It has, in consequence, frequently been prescribed, a little previous to the birth of the child, or immediately after, to patients that have been accustomed to flow immoderately, at such times, and it has always proved an effectual preventive.

"This singular property of the ergot, to diminish the enlarged cavity of the uterus, is never more strikingly exemplified, than when its agency is employed to restrain those floodings, which sometimes appear, in the early months of pregnancy, when the action of gestation has ceased, and abortion must follow. In such cases, it speedily excites, in the uterus, such energetic action, that its contents are soon expelled, and the hemorrhage ceases.

" In order to determine what operation it might have, on a healthy male subject, the decoction of one drachm has been taken at a dose; but it produced neither nausea nor other perceptible effect. After a few days, the same person took a like quantity, which proved equally inert: neither did the larger quantity of two drachms, at a few doses, but all within the space of two hours, occasion nausea, vomiting, or pain in the female, to whom it was prescribed, for deficient catamenia.

" Its operative powers, therefore, appear wholly confined to the uterine fibres, when lengthened from an enlargement of that viscus. In such case it speedily excites, in them, strong contractile action, and so long as the stimulating effect of the medicine lasts, this action is unceasing. The uterus is thus made to compress closely, upon any substance whatever within its cavity, and this resistance to its further collapsing, will cause violent pain in that organ; but if it find no such resistance, the contractile action progresses without any uneasy sensations. The healthy, unimpregnated uterus, having nothing within its cavity, will therefore not be affected by the ergot; neither is it calculated to restrain menorrhagia, proceeding from increased arterial action; as the size of the uterus, in such cases, is nearly at its minimum.

" Until we clearly understand the reason, why some medicines possess a greater affinity to one part of the system, or to one organ, than to another, it will be difficult to explain the *modus operandi* of the ergot. It is, as has been already observed, but a short time, since it first attracted the notice of physicians, as being subservient to any useful purpose in medicine; and I have not yet discovered that it possesses any other properties, than such as I have mentioned. Like all other active and valuable medicines, when first made known to the public, it requires a long series of judicious and attentive experiment, fully to develop its character, its qualities, and the precise manner in which it may affect different parts of the human system. Like them, while its use is beneficial, its abuse is destructive. A cautious direction of its powers cannot, therefore, be too strongly recommended. If properly administered, it must be esteemed an important and valuable acquisition to our *materia medica;* and is unquestionably destined to hold a high rank, among the means, which kind nature has provided, for relieving the sufferings of her children."

MEDICAL AND PHILOSOPHICAL INTELLIGENCE.

Vaccine Society.

THIS Society has continued its operations—919 persons have been successfully vaccinated by the Physicians of the institution in 1813; which, added to the patients of former years, gives a total of 5508.

The Society has made some change from its original plan. The following extracts from the present constitution, will serve to show the principle on which the Society was originally formed.

"The collector of cases shall call on such persons as may be deemed suitable objects for vaccination, and report them to the Physicians; a regular account whereof shall be kept for the inspection of the managers."

"The business of the Physicians shall be to go the houses of the patients, and vaccinate them. They are to keep an account of the names, ages, places of abode, and occupations of the persons vaccinated; and, if the patient be a minor, of the parent or guardian, with the events; and report the same to the managers."

Philadelphia Dispensary.

FROM the annual Report, published by the Managers, it appears, that THREE THOUSAND, ONE HUNDRED AND TWENTY patients have been attended by the Physicians of the Institution from December 1st, 1812, to December 1st, 1813.

Patients remaining from last year, . . .		81
Admitted since that time, ...		3039
Of which number the cured are, . .	2831	
relieved, . .	51	
dead, . .	77	
removed, . .	24	
irregular, . .	27	
remaining under care, .	110	
	——	3120

The Institution has received, including last year's balance in the treasurer's hands, Dolls.	5315 19	
A balance due the treasurer this year,	20 50	
Accounts passed by the board of managers, but not paid, ...	110 70	
	——	5446 39
The expenditures have been, . . .		5446 39

Managers elected January 1814.

William White, *President.*
Lawrence Seckel,
Robert Blackwell,
Henry Helmuth,
Robert Smith,
Robert Ralston,
Godfrey Haga,
Ebenezer Hazard,
Isaac Snowden,
Joseph Crukshank,
Elliston Perot.
Samuel P. Griffitts, *Secretary.*

Officers elected January 1814.

ATTENDING PHYSICIANS AND SURGEONS.

Doctor Henry Neill,
Samuel Stewart,
Joseph G. Shippen,
Joseph Woollens,
Joel Martin,
Abraham B. Tucker.

CONSULTING PHYSICIANS AND SURGEONS.

Doctor Thomas Parke,
Caspar Wistar,
Philip S. Physick,
Thomas C. James.

Treasurer,
John Clifford.

Apothecary,
George G. Tresse.

American Philosophical Society.

The following persons were on the 7th of January, 1814, duly elected Officers of the Society.

President,

Thomas Jefferson.

Vice-Presidents,

Caspar Wistar,
Benjamin S. Barton,
Robert Patterson.

Secretaries,

Thomas C. James,
T. T. Hewson,
Robert M. Patterson,
Reuben Hains.

Counsellors,

Thomas Cooper,
Robert Hare,
Edward Pennington,
William Meredith.

Curators,

Zaccheus Collins,
Joseph Cloud,
William Hembell, jr.

Treasurer,

John Vaughan.

METEOROLOGICAL OBSERVATIONS.

State of the weather at Philadelphia, during the last six months of 1813.

JULY.

Thermometer—Lowest, at 8 A. M. 63, 5th day of the month.
Highest, at 3 P. M. 89, 8th.
Mean, ... 70.

Winds—Westerly, the beginning—Easterly, towards the latter part of the month.

Moderate weather,—not much thunder,—frequent rains,—the harvest good, and well got in.

AUGUST.

Thermometer—Lowest, at 8 A. M. 64, 19th day of the month.
Highest, at 3 P. M. 85, 8th.
Mean . . . . 72.

Winds—Variable,—mostly westerly,—refreshing rains,—hurricanes in the West Indies, and in South Carolina and Georgia.

SEPTEMBER.

Thermometer—Lowest, at 8 A. M. 56, 7th and 30th days of the month.
Highest, at 3 P. M. 85, 13th.
Mean . . . . 62.

Winds—Westerly,—a pleasant month,—peaches and pears rather plentiful,—apples scarce,—melons in abundance.

OCTOBER.

Thermometer—Lowest, at 8 A. M. 35, 22d day of the month.
Highest, at 3 P. M. 64, 10th and 17th.
Mean, ... 50.

Much southerly winds,—cloudy weather and rain,—white frost on the 14th. A severe gale at Gottenburgh, in Sweden; many vessels lost. About the beginning of this month a severe shock of an earthquake in the island of Teneriffe.

NOVEMBER.

Thermometer—Lowest, at 8 A. M. 30, 15th and 16th of the month.

Highest, at 3 P. M. 59, 25th.

Mean, ... 41.

Winds very variable,—little rain,—Indian summer, commencing about the 6th, continued for a few days,—13th, some snow,—ice the 14th,—an heavy gale the 18th,—about the middle of the month a violent gale at Halifax, Nova Scotia—many vessels lost. Several severe shocks of earthquake in the latter end of this month, and the beginning of December in the Ilinois Territory.

DECEMBER.

Thermometer—Lowest, at 8 A. M. 26, beginning and end of the month.

Highest, at 3 P. M. 44, 7th.

Mean . . . . 32.

North westerly winds,—snow on the 20th,—ice in the river on the 21st. Two shocks of an earthquake at Russelville, Kentucky, on the 12th.

The dysentery was uncommonly prevalent in August in town and country,—frequently mortal, especially in the country. We have heard of no case of small-pox in the city during the last year.

THE

ECLECTIC REPERTORY

AND

ANALYTICAL REVIEW.

Vol. IV. APRIL, 1814. No. III.

SELECTED PAPERS.

An Essay on Inflammation of the Cornea.

BY JAMES PAXTON,

Member of the Royal College of Surgeons, London.

[From the New Medical and Physical Journal, for January, 1812.]

SOME observation and experience in the treatment of diseases of the eye, have led me to consider that there are two very principal distinctions in almost all inflammatory affections of this organ. It is not sufficient that we divide ophthalmias into acute and chronic affections. But if situation of the disease, and the peculiar texture and functions of the part affected be adverted to, rather than a comparative state of progression, we have a better prospect of forming a correct opinion of the morbid changes which take place, and of adopting a practice accordingly.

Ophthalmia, therefore, may be divided, 1st. into inflammation of the external or adventitious coverings of the eye and its appendages, the adnata, palpebræ, &c.; and 2dly, into inflammation of the proper coats and internal parts of the eye, the sclerotica, cornea, and contents of the globe of the eye. Further, external and internal disease of the organ of vision has been subdivided into diseases of the several parts which make up these general divisions. I am perfectly aware these various affections often exist together; and a precise limitation to one particular part can rarely be observed: yet, where any of those parts which are more immediately the optical media become affected, they demand our most serious attention, inasmuch as any morbid change they undergo must be detrimental to vision. Thus much is premised, on a general view of the subject; for I only propose to notice one species of the latter division, viz. inflammation of the cornea. It being the object of this paper to point out a plan of treatment in this affection of the eye, which has proved successful, not only in the hands of an individual, but extensively with some others who have adopted it. The importance of a thorough acquaintance with diseases of the cornea is self evident, since it is the cause of blindness in the majority of cases which occur.

The same pathologic remarks are applicable to the cornea, as have been observed of other parts which are dense in their structure. As the cornea is less organized, so is it less prone to enter into diseased action; but when once disease is formed, in proportion as its texture seems endowed with little vitality, during a state of health, so is its sensibility increased under disease, and its continuance more obstinate. The sclerotic membrane is also subject to this kind of inflammation; frequently it suffers with the cornea; and when the latter becomes visibly vascular, the vessels may always be traced from the sclerotica.

The exciting causes of this disease are numerous: it is induced by outward injuries and constitutional disorders. Whatever may be the cause of inflamed cornea, it is characterized at its commencement by a sense of uneasiness, or pricking pain in the eye; watery discharge, great aversion to light, and constriction of the palpebræ follow. A faint scarlet colour surrounds the cornea; which, on close inspection, proves to be minute ramifications of vessels of the sclerotica. The pupil is contracted, the adnata of the globe of the eye, and where it lines the palpebræ, has an increased vascularity.* If the disease is severe, the orbicularis palpebrarum spasmodically closes the eye-lids; intolerantia lucis, or such sensation, is excited by the weakest light, which at other times is occasioned only by the vivid solar rays; violent pain in the head, or lancinating deep in the eye, indicate its malignancy. As the disease advances, the cornea soon appears dim, and a small whitish speck marks the incipient ulceration; which is sometimes so extensive, as to allow the humours of the eye to escape, by which the cornea becomes flattened, and the eye sinks in the orbit; no renovation of these parts can take place, but inevitable blindness is a certain consequence. Whenever the cornea ulcerates, staphyloma, leucoma, albugo, some kind of opacity, or defect of the cornea, will be its termination; which, according to its extent, must diminish the field of vision.

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* These vessels appear distinct and tortuous; while the vessels of the sclerotica run in a straighter direction, and are more obscure.

I forbear giving any minute account of the various effects to which inflamed cornea gives origin: it is sufficient for my present purpose, if the species of ophthalmia I allude to be recognized by the description I have given of its progress. At the same time, I wish to impress the necessity of adopting a prompt use of measures, to prevent such fatal consequences.

The treatment I have found most beneficial in this disease, consists in a topical abstraction of blood. Always, on the first attack of the disease, and whenever there is an accession of pain, cupping the temples, or the application of leeches to the adjacent parts, will prove of the greatest utility. Of these two methods, that of drawing blood by cupping is the most efficient; and, if the following method be used in performing the operation, no difficulty whatever will be experienced in taking any quantity of blood thought necessary.

After the scarifications have been made, and the glass applied in the usual manner, its lower edge is to be raised with the hand; otherwise, the exhausted glass presses the branches of the temporal artery against the bone, in so great a degree, as to prevent the vessels under the glass receiving their usual supply of blood, and of course, this compression must be a hindrance to the free bleeding of the scarifications. A want of attention to this particular, is the reason why only a small and ineffectual quantity of blood is generally obtained; but if the above mode be adopted, any one may with facility draw the quantity required. It may not be amiss here to observe, that the hair should be previously shaved from the temple, and the common sized scarificator and cupping glasses will seldom be found too large.

Leeches may be applied to the upper and lower eye lids; which, by taking blood as near as possible to the seat of the disease, much expedites the cure; and in all internal inflammations this should be done as early as possible; afterwards, tepid fomentations will at once encourage the bleeding, and contribute in subduing the inflammation. On a well-timed depletion of this kind, I have noticed the disappearance of those urgent and distressing symptoms, pain and irritability to light. Leeches may be used where the disease occurs in delicate females, who feel terrified at the idea of a cupping instrument; but in most cases, the employment of the latter, on several accounts, will be found more expedient.

As this remedy often proves but a temporary relief, it will be necessary to have recourse to this practice, whenever pain is experienced in the part affected. In a very severe case of inflamed cornea, which succeeded a purulent ophthalmia, and where ulceration seemed inevitable, no other remedies appeared to suspend the progress of the disease: after four or five ounces of blood were taken from each temple, the patient's eyes were easy, the cornea became more clear, light more tolerable, and lachrymation diminished: but a recurrence of these symptoms demanded a repetition of the operation; in the course of five weeks, no less than eleven times. Besides cupping, various applications were used, as fomentations, sedative lotions, blisters, &c. Several times also this patient went into a warm bath: these, I apprehend, were useful auxiliaries; but I could attribute that decided good effect to none but the cupping, to which I ascribe the eventual restoration of the patient.

With regard to the many different applications which are in request, I have found none so useful as a pledget of lint or soft rag, moistened in a solution of opium, of the following proportion. ℞. Extracti opii ʒij. Aquæ ferventis ℥xii. Solve et liquorem frigefactum cola.

This remedy will contribute to abate irritation and inflammation, in a more powerful degree than any other I am acquainted with; indeed, the cooling and astringent lotions it has been customary to recommend, which undoubtedly are serviceable in inflammations of the adnata, I consider injurious in this species of ophthalmia. The class of medicines called sedatives, deserve a preference: aqueous solutions of the extractum belladonnæ, hyoscyami, conii and opii, are found of essential service; and frequent trials authorise me to say, no apprehension need be entertained, that these applications will paralyse the iris: on the contrary, after a continued use of the belladonna for a fortnight, the pupil remained obstinately contracted. In this place I would again observe, that whenever the cornea is inflamed, the use of any astringent or stimulating collyria, will be an additional cause of the duration of the disease; and, I think, has been a fruitful source of mischief. If the rays of light (its natural stimulus) prove too great an excitement, how much more so will be irritating applications? The precaution of excluding the light, by means of a black or green shade, is therefore advantageous; and as smoking tobacco and a smoky room have been known to cause a relapse, they should be avoided.

Blisters, setons, issues, and other modes of producing revulsion, or counter irritation, may be considered as remedies possessing only a secondary advantage.

With respect to medical treatment, I believe no remedies have been recommended as materially counteracting the disease: it is rather left to the practitioner to adopt a medical line of practice, which constitutional exigencies demand, and his judgment dictates. As a general observation I would note, that the same diet and regimen are necessary as in other inflammatory disorders. The digitalis, from its supposed powers in lessening the action of the heart and arteries, under my own observation, has had repeated trials; but without proving advantageous. It has been observed, that in instances where the patient has had occasion to use mercury, the disease, under its influence, has been greatly aggravated.

Among the best internal remedies, I feel a confidence in recommending the use of nauseating doses of antimonium tartarizatum. Scarpa indeed ordered this medicine, but merely considering it as a purgative: however, I have no doubt but it has other effects peculiarly advantageous in ophthalmias. First, as it relieves the aridity of the skin, a circumstance which may have brought on the disease; and, secondly, the temporary sickness which it induces, causes a debility, particularly of the superficial vessels of the body; and though actual vomiting may cause a greater determination of blood to the head, yet the operation of emetics, short of this, has quite a contrary effect; manifestly producing a paleness of countenance and languor, intimating a diminished force in the circulation. One grain of tartarized antimony dissolved in eight ounces of barley-water, may be given in divided doses, so as not to occasion violent purging, or actual vomiting. The good effects which I had observed from sea-sickness, when accompanying ophthalmia patients on board transports, first suggested this practice; and I found similar advantages from the use of the antim. tartar. at a time I had charge of a great number of the foregoing disease in the ophthalmia depôt at Danbury.

It will be seen, I have considered inflammation of the cornea only abstractedly, without describing its various combinations with other diseases of the eye; nor will this limited communication admit of it; it would necessarily include purulent ophthalmia, and diseases of the palpebræ. Thus the cornea may become inflamed from an inverted palpebra; when it is evident this source of irritation must be removed, before any application of remedies can be advantageously made; indeed, very often, the cilia ceasing to be a cause of the corneal affection, the disease will spontaneously get well. Should a particle of glass, a scale of iron, or other extraneous substance, have induced the disorder, the eye should be carefully examined, in order to discover and remove the offending substance, should it still remain; commonly the flux of tears may be sufficient for this purpose; but I have known a bit of thorn imbedded in the cornea for some days, and occasion an extensive suppuration, which might have been prevented, had it been removed with the forceps. From this consideration, a minute inspection of the eye, in all cases, should never be dispensed with.

A tedious form of the disease under consideration, often occurs as a sequel of an acute ophthalmia; probably, where a decided antiphlogistic regimen has not been carried to the extent the nature of the disease required. This sub-inflammatory or chronic inflammation of the cornea, is frequently seen in children of scrophulous habits: increased sensibility to light, lachrymation, and deep-seated vascularity of the surrounding sclerotica are its attendants; these symptoms will be augmented by a bright light; and on examination of the eye, causes a copious effusion of tears. I am inclined to think this affection of the cornea occasions that weakness of sight mentioned by Mr. Stephenson; though he attributes it to an inflammation of the retina, or choroid. My reason for the former opinion is this; that, should the disease be of long continuance, the cornea becomes cloudy, or even ulcerates. Is it not, therefore, just to conclude, at least in this instance, that the "morbid sensibility" depends on a chronic inflammation of the cornea?

The means I would recommend for the cure, does not materially differ from that employed by the last named author, excepting that instead of leeches, I more frequently use cupping to the temples; which is put into practice whenever there is pain, or a hot discharge of tears. The sensation of heat in the lachrymal discharge, is a sure sign of increasing disease; though it is a mistake to suppose this secretion has an increased temperature at one time more than another: it is but the exquisite sensibility of the eye that causes this sensation. Dropping the aqueous solution of opium into the eye, will likewise greatly assist in quieting the irritation. The eyes should be protected from a strong light; and a spare diet, with the occasional use of purgatives, are to be recommended.

A lad, about twelve years of age, was brought to me with a chronic inflammation of the cornea. Numerous vessels were observed in the lamina of the sclerotica, particularly round the margin of the cornea, and some minute branches might be traced into it. He was unable to read, unless a very large type; and even this effort gave pain: an exposure of the eyes to light, caused a copious flow of tears. He had had the small-pox when about four years old, since which time he had been subject to repeated attacks of ophthalmia. The disease had now existed for five months; and, notwithstanding the use of a variety of applications, the complaint gradually became worse. I drew blood from each temple with a cupping glass, and directed the solution of opium to be instilled into each eye, three times a day, and pulv. jalapæ gr. viij. hydrarg. subm. gr. j. alternis diebus mane sumendus. The good effect of this practice was observable in a few days. In the course of a week cupping was repeated, and blisters applied, and kept open behind the ears; still continuing the use of the solution of opium. In a fortnight, the lad threw aside his green shade, and his eyes appeared perfectly well.

I beg leave to subjoin one instance, in which the solution of opium alone, seemed to possess the power of suspending the inflammation.

A medical gentleman asked my opinion of an ocular complaint, with which his right eye had for some time been affected. No pain was experienced, except from luminous objects, or a strong light; he complained of dimness and weakness of sight. On a close examination, I could observe two small ulcerations of the cornea. The adnata had its natural appearance; but some vessels of the sclerotica could be obscurely seen to proceed towards the situation of the ulcers, and a magnifying glass traced them into the cornea itself. The solution of opium was advised to be dropped into the eye; its use was continued for eight or nine days, and the eye perfectly recovered.

A Case of the Operation for Empyema, followed by a Discharge of upwards of Five Hundred Hydatids.

BY DR. FRETAU, OF NANTES.

[From the New Medical and Physical Journal, for September, 1812.]

HOWEVER rare collections of pus in the thorax may be, the employment of the proper means for their removal seem to be much more rare. Two celebrated Academicians, Foubert and Ledran, long ago complained of this circumstance, dissection having oftentimes pointed out to them how serviceable the operation would have been, had it been resorted to during the patient's life.

The operation for empyema is neither dangerous in itself nor very painful. The cause of its being so rarely practised, is our want of knowing the precise seat of the purulent collection. But if there has been thoracic inflammation, without a critical resolution taking place; if a sense of weight is experienced in the part formerly attacked with pain; if there come on difficult respiration, a dry cough, febrile symptoms, and wasting of the flesh; if the patient can only lie on the affected side, cough and dyspnœa following his attempt to lie on the opposite one; if the ribs appear more elevated on the affected side, and the intervals between them more distinct; if this side also appears swelled; and if, upon striking the side with the fingers, an obscure sound is perceived, different from what is observed in its healthy state; lastly, if a tumour arises in the part affected with pain, or in a depending part of the thorax, we may, from this assemblage of symptoms, certainly conclude, that there subsists a collection of pus in the thorax. I have successfully performed the operation for empyema in the part first attacked with pain.

Mademoiselle Chatellier, aged 9 years, was seized with the symptoms of inflammatory peripneumony, accompanied with bloody expectoration, and a fixed pain in the right side of the chest. The disease, at first, was left to the feeble efforts of nature; but in about twenty days, a great sense of weight was felt in the affected part; a fever attended the suppuration, and night sweats succeeded; the expectoration was decidedly purulent. In a few days matters were at the worst. Being at this time called to the little patient, I examined the seat of the pain, which I found rather hard; I applied a cataplasm, and in a few days there appeared a slight inflammation in the part; I made an incision, and an enormous quantity of pus was evacuated; the expectoration soon diminished, every thing wore a favourable aspect, and in about two months from the operation, there scarcely remained any vestige of a disease, which, without surgical assistance, would have proved fatal.

I have also very recently had occasion to perform the operation for empyema in the most depending part of the thorax.

Pierre Berthelemi, a tinman, aged 28 years, of a small stature and nervous constitution, had attained the age of 25, without experiencing any serious inconvenience. Being at this time confined in a dungeon, on account of some forgeries, he suffered a great deal there, and came out in December 1808 with a copious psoric eruption, swelled feet, and a complete derangement of the gastric system; for these complaints he was methodically treated, and became entirely well in about two months. He now exerted himself in his employment with indefatigability, and continued it with success for two years, when he was exposed during hard labour to alternate heats and colds. In the beginning of January, 1811, he was confined to his bed with a rheumatic affection, which had its seat in the abdomen. It took on a nervous character, and I suspected that his working in lead might have some share in producing his complaint. In about three months after this, Berthelemi was again seized with pains in all his limbs, which he immediately wrapped up in woollen clothing. This second attack did not confine him so long to his bed, but his recovery was less complete; and the changes of weather occasionally renewed his pains.

On the 30th of last August, this man was suddenly attacked with pains in his loins, and more particularly in the right side of the chest; the pain extended to the arm of that side, and also to the shoulder, so as to give suspicion of the liver being affected. He had fever with a hard pulse, oppression, hickup, and high coloured urine. He made use of a suitable regimen and cooling diluents; leeches were repeatedly applied, and the symptoms were gradually relieved. The fever had entirely ceased by the tenth day of the disease, but the pain in the shoulder and the thorax still remained, although with less intensity. Burgundy pitch plaisters were applied to the parts. The patient could not walk upright; he was pale and wasted. He passed the month of September in the country, and made use of a milk diet; in the latter part of this month he was seized with a troublesome dry cough. On his return to town, the 2d of October, he told me he had lost the pain of his arm; that the pain in his shoulder was much less, and that his complaint in the right side occupied but a small space, and was fixed in the posterior part of the thorax; that the cough was always troublesome, and that sometimes respiration was very difficult. In this state of things I was led to examine the thorax very accurately; and I readily perceived, at the posterior and inferior part of the right side, a swelling occupying about the space of a playing card. It was situated about two inches from the spine, and its centre was between the tenth and eleventh ribs. I ascertained, by percussion, that the right side gave a more obscure sound than the left, and I found that the patient could only lie on his back or right side: I therefore now entertained not the least doubt of there being pus or water collected.

I applied cataplasms to the swelling, in hopes of increasing the congestion towards that part. I visited him every fourth or fifth day through the month of October, without finding much change. The centre of the tumour, however, had become softer, and more pointing. The patient at this time had night sweats, and began to expectorate puriform matter; he had also irregular accessions of fever. On the 10th of November, the patient experienced a protracted fit of coughing, and spat up half a wine glass of purulent matter. The part being examined by M. M. Bacqua, Taillé, and myself, we felt an evident fluctuation in the centre of the tumour; the fluid receded into the thorax upon pressure, and when the patient coughed, the tumour re-appeared. It was decided to open the tumour immediately. An incision, about eighteen lines in length, being made through the skin, in the centre of the tumour, between the third and fourth false ribs, and in the direction of the bones, we perceived a white cyst forming a hernia between the intercostal muscles. This cyst was opened; there first flowed out several spoonfuls of clear limpid water, and immediately afterwards, a great quantity of yellowish pus. The wound was dressed with a simple tent, covered with compresses, and the whole were retained by a scapulary. The patient experienced great relief from the operation, he neither complained of the pain in the back, nor of oppression. The next morning the dressings were removed; the cyst was found upon the compresses, and it appeared to have been, in its entire state, about the size of a goose's egg. Sixteen double compresses were at each dressing moistened by a yellowish purulent matter. Other cysts very soon came out of the wound; and on the fifth day from the operation another was protruded, the size of the first. On the tenth day were discharged several hydatids, the size of small bird's eggs; they were filled with a transparent serosity.

In the night of the 15th day, the patient having been much fatigued, felt a great anxiety about the præcordia, coughed excessively, and expectorated ten reddish hydatids, the size of lentils; they were entire, and envelloped in reddish mucus, similar to glue. The next morning, when the dressings were removed, the suppurated matter had become thick, of the colour of gooseberry syrup, and among it were twenty hydatids of a flattened shape, containing a kind of gelatine. These vesicles resembled grapes dried on the vine, or rather preserved cherries.

On the 17th day from the operation, (that is, the 29th of November) the patient was seized with cold sweats, accompanied by great oppression; the cough was very excessive, and the patient expectorated several red hydatids, with about four ounces of mucus, of a fibrous appearance.

I had observed, that until this time the pulse was always small and weak, and that the expectoration came on in great abundance every eight-and-forty hours. On the 3d of December, there were twenty-four hydatids upon the dressings, of the same colour as the former ones; and the next day, after the morning dressing, the patient was almost drowned in his bed by a copious discharge of matter, of a syrupy consistence; there were also about one hundred hydatids. Next morning the compresses, the bandage on his body, and the bed clothes were inundated with the same matter, in which were counted 150 hydatids; this was not all; for after cleaning the wound, the patient was desired to cough, (which he generally did every ten minutes) and about half a pint of reddish matter was discharged, among which we could discern some streaks of yellow pus. A great number of hydatids were also swimming in it. From the 5th to the 9th, the patient went on tolerably, and the wound discharged 80 hydatids.

On the 10th, about two hours after the dressing, he was seized with repeated troublesome coughing, threatening suffocation; he had syncope and cold sweats; towards noon were coughed up two bags of hydatids, of a pale colour, six or seven lines each in length. He passed the night favorably as well as the day of the 11th.

On the 12th, the patient appeared fatigued; there was copious muco-purulent expectoration; the discharge from the wound was reddish, serous, and very fœtid. There were about 15 hydatids removed at the evening dressing.

From the 12th to the 14th, the wound produced a thick white matter of a good appearance, and not very abundant. The patient sat up, was without fever, and had a good appetite; he would have slept well, had he not been frequently awakened to expectorate some remains of hydatids swimming in a thick tenacious mucus, of which the quantity was very large.

He continued nearly in the same state until the 20th.

The patient had taken tar water for the last twenty days, had drank a decoction of the lichen islandicus, and also lime water, which he took gradually to the dose of three ounces in the day. He also took pills of sulphur and calomel, and a blister was applied to the arm.

This day, the 26th of December, (the 45th from the operation) the wound was much contracted; the tent, however, could easily be introduced. At first, it was introduced to the depth of three inches, in a direction upwards. At present the tent did not reach above an inch. The patient was without fever, had appetite, and continued sitting up. He could have gone out had the season permitted; he continued to expectorate hydatids occasionally.

From the 30th day after the operation, the patient could lie easily upon either side, which he had not been able to do for four months previously.*

The presence of hydatids in the chest has been ascertained in several instances; sometimes by examination after death, and at other times by the expectoration of portions of membranous substance which have been considered as shreds of the hydatids; but in the case I have recited, twenty entire hydatids were expectorated, about five hundred were discharged by the wound in the thorax, and to a certain degree the patient may be considered out of danger. The discharge of these hydatids was witnessed by several practitioners in Nantes. Great part of them were dried upon plates of glass, and kept in solutions of super-oxygenated muriate of mercury, or of sulphate of alumina; this latter in general altered the colour less. Many of the vesicles were flattened, the sides being pressed together. The red colour of the expectorated matter was undoubtedly owing to some of these substances being broken down. Part of the hydatids had a round form, the greater number were oval; some were white, and contained only a very limpid serosity, the greater part were of a deep red, and on this account strongly excited the curiosity and surprise of the public. They contained a kind of very thick jelly; others were of a straw colour. Three of them were as large as goose-eggs, one the size of a pullet's egg, and twelve as large as pigeon's eggs; they were white, and contained a clear serum. The greater part of the red vesicles were about the size of a grape, some as small as lentils, and a few resembled hemp seed in size. Externally the vesicles were smooth, and appeared to be of a homogenous cellular structure. In examining them attentively, two membranous layers could be discovered; the internal surface was villous. In general, the cyst possessed a certain degree of resistance, several vesicles fell to the ground without breaking. One of the largest of the cysts was dissected by M. Bacqua and myself; it consisted of three distinct membranous layers, which could easily be separated; in the inside were several oval bodies, containing an albuminous liquor. All the vesicles appeared to be porous, so that the deepest coloured ones, after being left in cold water some time, parted by degress with their colouring matter.

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* It appears by a letter, written to the Editor a month after the case was sent, that the patient continued mending; the wound was reduced to a small fistulous opening, with a slight discharge of a healthy appearanee; no hydatids had come away for twenty days; the patient was without fever, had a good appetite, and was fast recovering his flesh and strength.

Lymphatic vesicles, called hydatids, have been frequently observed in the human body, and have always been considered as the effect of some disease of the parts where they are situated. Such was the opinion of Vesalius, who found eight or ten vesicles as large as goose-eggs in the ovary of a woman, who died of a dropsy of the uterus; of Ruysch, who relates, that a surgeon, supposing a certain woman to have a collection of pus in the thorax, set about performing the operation for empyema, and pierced the abdomen in the right hypochondrium, whence issued a great number of vesicles: upon dissection, it was ascertained that they had their seat in the liver, the whole substance of which was one complete mass of hydatids; of Camper, who speaks of a woman dying of encysted dropsy, in whom were found above two hundred vesicles floating in purulent matter; of Litre, who found in the great lobe of the liver, a considerable quantity of purulent matter, in which were swimming a great number of oval vesicles filled with transparent viscid fluid; of Morgagni, Lieutaud, and many other authors I could quote, who all agree in considering hydatids as being the result of morbid affection, depending upon a change in the cellular texture, the vessels, and the fluids which circulate through them. Thus Ruysch says, *Hydatidas esse extremitates vasorum sanguiferorum quæ priorem suam mutaverint naturam.* Others have given explanations of their formation, more or less ingenious, but all erroneous. It has been for some years asserted, that hydatids are produced by a worm having the generic characters of tænia, which has been denominated *tænia hydatigena* by Pallas, to whom we are indebted for the first methodical work on this subject. Muller, Leske, Bloch, and several other naturalists, have extended the observations of Pallas, and the medical and zoological treaties of M. Mougeot appears to contain all that has hitherto been said on the subject. Since the labours of these celebrated naturalists have become more known, and have drawn the attention of anatomists to the vesicular worms discovered by Hartman and Tyson, most physicians who have met with disengaged vesicles of a soft texture in the human body, have not hesitated on the faith of these naturalists, to consider them as real tæniæ hydatigenæ; yet it must be confessed, we look in vain for the true character of tænia in these vesicles.

Werner found in an open cyst, in the superior part of the thigh, some disengaged vesicles, as large as eggs, which at first sight appeared to resemble the tænia hydatigena, but on an attentive examination, he could discover neither head nor tail, only some small granulations on their internal surface. These vesicles, submitted to the greatest magnifying powers of the microscope, were of a homogenous structure, without any visible organ; Werner therefore concluded, that they were not worms, but only degenerated lymphatic vessels. Dr. Darbefeuillè, surgeon in chief to the hospital at Nantes, found a great number of similar hydatids in a breast he took off; he examined them with a microscope, and formed the same opinion as Werner. However, it must be acknowledged, there is a great difference between those firm membranous vesicular tumours strongly attached to parts, and the softer vesicles free from all adhesion, and floating in cavities. It was reserved for Dr. Laënnec, a physican at Paris, to throw complete light upon this subject. "These vesicles," says he, "are animals to which the name of *acephalocysts* should be given; under the microscope, this vesicular worm presents a homogenous texture, in which no organ can be distinguished; its cavity is filled with a fluid, which is generally perfectly limpid, and has all the properties of pure water mixed with a little albumen." Dr. Laënnec observed on their internal surface some granulations, small oviform bodies, which are, he thinks, destined for the reproduction of fresh hydatids; it appears to him, that at a certain period of their growth, these floating worms are detached from the sides of the parent, fall into the cavity, and afterwards increase in size. He has several times met with these vesicular worms, containing others in them; these latter also containing others. It is presumed, that when these new worms attain a certain size, they occasion the mother to burst, by their great distension; for we almost always find the largest vesicles ruptured. This mode of reproduction does in truth enter into the plan of the great Creator. Polypi are regenerated by buds which adhere to their sides, and when their growth is perfect, they separate from the individual which produced them.

The acephalocyst, according to M. Laënnec, is the most simple of all insects; it appears only in the form of a membranous bladder, of the consistence of half concreted albumen, in which the eye, assisted by a microscope, can discover no distinct organ. This simplicity of organization might almost lead us to doubt if these vesicles were real animals, but their reproduction is an incontestable fact, and their automatic motions, no equivocal sign of life, leave no doubt concerning their vitality.

M. Percy observes, that the opportunities of ascertaining the characters of animality and the vitality of hydatids in man are very few, on account of the time which generally elapses between death and the dissection; this, he says, prevents our finding them alive. He says, however, that when discharged from the human body, they have, in an hundred instances, been observed to tremble and to move. I must confess, I have never observed this, although I have seen at least 500 hydatids discharged from the thorax of a living man, and have frequently assisted M. M. Chireau, Richard, jun. Bacqua, Darbefeuille, Fouré, Taille, Cochard, Aublanc, and Lafont, in endeavouring to ascertain their vitality. We have also been assisted in our labours by M. M. Dubuisson, keeper of the cabinet of natural history, and Leboyer, professor of physics at the Lyceum; and none of us have been able to recognize any of the characters of the tænia hydatigena.

I think myself authorized, therefore, to range these hydatids in the species of vesicular insect designated by M. Laënnec, all under the name of acephalocysts; it will readily be seen, that which has been said by physicians concerning hydatids, must have reference only to this vesicular insect. Besides, whoever has read with attention the descriptions given by Pallas, and have examined with care these vesicular worms, will be convinced that the latter are far from having any of the characters of the tænia hydatigena, observed by that celebrated naturalist in sheep and pigs.

Thus, in the present state of our knowledge, we must no longer regard hydatids as the effects of a morbid state of the lymphatic system; such an opinion would be far from the true one. Hydatids are real animals, which must be classed among the vesicular worms, and be henceforth designated by the name of acephalocysts.

Extracts from J. C. Saunders' letters to Mr. Stevenson on the Operation for Cataract, dated April and August, 1808.

[From the New Medical and Physical Journal, for October, 1812.]

"My Dear Friend,

"I confide the method of operating which I pursue for Cataract to your honour, and I am very certain that it is safely deposited. I shall not have time to point out all the advantages which result from this deviation from the old method of couching; but simple as they may appear, they are very important, as you will perceive when I detail all the circumstances, which I shall sometime do, in a Treatise on the Cataract.

"I always use the solution of belladonna,* and never begin the operation until the pupil is as much dilated as it will admit of, keeping the eye, by means of Pellier's elevator, or else my own fingers, as steady as possible. The object of my introducing the instrument into the eye is, to cut the capsule in the *anterior* part of the crystalline; and therefore, as the

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* It ought to be generally understood, that the influence of the belladonna in producing a dilated condition of the pupil, is equally great when

the extract, made of the consistence of cream, is thickly besmeared, and suffered to remain for an hour or two over the skin of the palpebræ, as when it is introduced underneath them, immediately upon the anterior surface of the globe of the eye. As I have repeatedly witnessed, in irritable and chronically inflamed states of the organ, a very considerable degree of excitement of the vessels of the conjunctiva, accompanied with severe temporary pain, induced by the latter and more general mode of applying the remedy, I do not hesitate exclusively to recommend its *external* employment, which, whilst it alike secures the specific effect of the belladonna, is not productive of the slightest inconvenience in any respect. I cannot omit to add, that a strong infusion of the stramonium instilled into the eye, is also very effectual in causing a dilatation of the pupil, with the advantage too of exciting infinitely less irritation and uneasiness than the former narcotic used in the same way. In a few cases I have known double and confused vision, and different kinds of ocular spectra invariably follow its use. Lady T. to whose eye I applied it rather liberally with the view of enlarging the pupil which had become nearly obliterated from preceding internal ophthalmia, never failed to experience these effects to a most remarkable and alarming degree; nor did they ever entirely subside till some days had elapsed after the discontinuance of the belladonna. However, it must be admitted, that such is by no means the *general* consequence of its employment. On the contrary, in by far the majority of instances, it seems to exert its peculiar agency *solely* upon the iris; the sympathetic, as well as associated actions of which, for a time, it wholly destroys. The supposition that attributes this influence to its specific operation upon the radiated *muscular* fibres of the iris is however unquestionably gratuitous, and many plausible arguments (which are enumerated in my Lectures on the Eye) might be adduced in opposition to that hypothesis. The iris possesses, indeed, in all its motions, a peculiar mode of action, differing essentially from what is observed in every other kind of organized texture. Its usually expanded or passive condition in amaurosis proves that the contracted is a state of activity or violence; and its motions cease at the moment of death, and cannot, like those of *muscular* fibres, be renewed by the application of stimuli. And when accidently cut, by falling before the knife in the operation for extracting the cataract, it hangs loosely pendulous in the aqueous humour, without manifesting a disposition to contraction. Blumenbach believes, (and of this opinion is the illustrious Haller) "the cause of its motions depend on its vita propria, or peculiar vital properties, since the iris, he remarks, both in regard to its structure and vivid colour, as lens is generally more dense towards the *centre*, I take care that it shall pass through the crystalline as near to the capsule as possible. That the instrument may traverse the lens freely, you will observe that it is made of the greatest admissible tenuity, and flat, and that it cuts towards the point on each side. I find by experience, that it can be conducted, with care, through the hardest lens; whereas the needles, such as Scarpa's and Hey's, only push the whole lens before them, and without being able to carry the instrument to the capsule, the lens is made to press on and protrude the iris, whence results the consequent inflammation. As for the crystalline itself, you may or may not meddle with that; it may be well to loosen its texture in some instances, but you ought never to depress it. The instrument should enter the sclerotica about a line behind the ciliary ligament, and should be conducted through the anterior part of the crystalline which is the softest. You may loosen the texture of the cataract before you divide the capsule, or after, as in the operation seems most convenient, but the *capsule must be divided at all events.* I do not much care what becomes of the *substance* of the crystalline. I sometimes let it go in considerable quantity into the *anterior* chamber, *if it seems tending that way*, but I never push it, because that must press the iris. N. B. Follow Hey's rule, to be careful *not to do too much.* After the operation, the plan with me is purely antiphlogistic, and I believe you well know what that is. If your operation should not succeed at the first attempt, describe to me the appearances, and I will gladly give you my sentiments as to repeating it.

well as with respect to its actions, is altogether singular and anomalous. Nor has he been able, he adds, in a single instance, to detect the existence of *muscular* fibres, not even in the elephant and whale, any more than in the owl and the white rabbit." And, as we must believe in the *identity* of *muscular* fibres, and in their subserviency to the *same laws*, in whatever situation they may be found, if the inspissated juice of the herb alluded to, produces a dilation of the pupil solely by virtue of its action upon the *radiated muscular* fibres of the iris, ought not, on that supposition, the orbicularis palpebrarum, with which the remedy is in much closer contact, to be at least simultaneously, if not primarily affected?—*Note by Mr. Stevenson.*

"With respect to congenital cataracts, from the repeated conversations we have had on the subject, it seems scarcely necessary for me to remind you that they are generally capsular, the whole or the greater part of the lens having probably been, at some antecedent period during the fœtal state, spontaneously absorbed. I shall only add to what I have already stated, that the steps to be pursued in the operation are nearly similar to those adopted for lenticular cataract; the great object being, either to make a sufficiently large central aperture for the rays of light to pass freely through it to the retina, or else to endeavour to tear the condensed capsule into as small fragments as possible, when it will become soluble in the aqueous humour, and be gradually absorbed; for which purpose, you may use the needle with much more freedom than in the former case.

With our united regards,
I am, yours faithfully,
J. C. SAUNDERS."

Experiments made on certain Preparations of Gold.

By M. VAUQUELIN.

Read to the Society of Pharmacy, at Paris.

[From the New Medical and Physical Journal, for April, 1812.]

SINCE M. Chreatien, a physician at Montpellier, has published an account of the effects which he obtained by certain preparations of gold in syphilitic and scrophulous complaints, and has asserted that these preparations are never attended with the inconvenience which sometimes results from mercurial compositions, other physicians have begun to employ them. The forms under which they have commonly been used are, 1. Gold in a state of minute division. 2. The muriate of gold. 3. The oxyd of gold precipitated by potass. 4. The precipitate obtained from its solution in muriatic acid by metallic tin. There is some difficulty in obtaining these preparations always in the same state; and as a principal object in medicine is uniformity in the quality of remedies, I thought it might be useful to examine these substances, and to determine with exactness the best methods of procuring them.

1. *Of the Quality and Quantity of Nitro-muriatic Acid most suitable for dissolving Gold.*

Formerly it was usual to compose the nitro-muriatic acid of two parts by weight of nitric acid and one part of muriatic acid. But considering that gold requires for its solution only a very small quantity of oxygen, and that the nitric acid is of no further use than to supply this, I thought, that by forming the *aqua regia* in proportions inverse to those, I should better accomplish this end. And, indeed, three parts of nitro-muriatic acid formed in this last way is sufficient to dissolve gold, whilst it requires four parts of the other. That a very small quantity of oxygen is united with the gold at the time of its solution is evident by the trifling extrication of nitrous gas, and yet there is reason to think some part of this gas is formed by the action which takes place between the two acids, since it is also disengaged from the oxygenated muriatic acid. The solution of gold, evaporated in a proper manner, crystallizes in prisms of a yellow colour, whose form has not yet, I believe, been very exactly determined. The evaporation of the solution should be conducted with very careful management, otherwise a part of the salt is decomposed, and the gold re-appears in its natural state, in the form of very small leaves. The solution of the muriate of gold is acted upon differently from the other metals by the fixed alkalies, most of the other metals are precipitated in the state of oxyds. Potass, soda, barytes, and lime, do not in the least render turbid the solution of gold in the cold; it only takes an intense red colour with potass and soda, something similar to that of Stahl's martial alkaline tincture; time produces no change in the limpidity of these mixtures. Barytes and lime do not produce the same colour in the solution of gold, owing, without doubt, to the great quantity of water required to dissolve them. If after having completely saturated the acid of the solution of gold, the mixture is heated, a red matter is separated in the form of large flakes, resembling in appearance the oxyd of iron at a maximum. If an excess of caustic alkali, ever so small, is poured into the liquor, and it is made to boil, the volume of the precipitate is much diminished, and it takes a colour, which viewed in the mass appears brown, but is in reality blue; for the molecules of the matter suspended in the liquor, which is of itself slightly yellow, causes it to appear green.

The liquor from which the matter above spoken of is precipitated by potass is quite colourless, but if it is saturated with muriatic acid, it immediately takes a yellow colour, like the ordinary solution of gold, and the sulphate of iron precipitates from it metallic gold. All the washings of the precipitate, even to the last, afford signs of the presence of gold, which indicates that the matter is slightly soluble in water; the last washings, however, contain less gold than the former ones. When the liquor contains a certain quantity of gold, the precipitate which is formed by the sulphate of iron speedily takes a brown colour, whilst in the liquor which contains a very little gold, no precipitate at first takes place by the sulphate, only the liquor becomes of a fine transparent blue colour; but at length a black powder falls to the bottom, and the liquor becomes colourless. This circumstance seems to prove, that when gold is very minutely divided, it is of a blue colour, and that it only acquires its natural colour by an assemblage of a certain number of its molecules. This will explain, 1st. Why a very fine leaf of gold, pierced with small holes, appears green when placed between the eye and the light; because the blue colour of the parts which are most divided is combined with the yellow colour of those parts which are less divided. 2d. Why, when a concentrated solution of sulphate of iron is poured into a solution of gold, in sufficient quantity to reduce all the gold, the liquor is of a fine green; because the yellow colour of the particles of gold, which are united in small masses, is in some sort combined with the blue colour of those which have not yet united; 3d, and why, in proportion as the first set fall to the bottom the liquor becomes more blue, and remains so till the whole is precipitated. Hence it is probable that the precipitate of Cassius is not entirely metallic gold, but rather a mixture of oxyd of gold, oxyd of tin, and a small quantity of metallic gold. No precipitate is thrown down from the solution of gold by mixing with it carbonate of potass, an efferveseence only is produced. In about thirty hours the liquor becomes turbid, but no separation takes place; as the carbonic acid is disengaged the liquor takes a fine rich red colour. When the above mixture is boiled, there is formed a very thick magma of a light kermes colour, but this colour is not changed by boiling with an excess of carbonate, as happens with the caustic potass, which indicates that this latter produces some action upon the precipitate. After the liquor from which the red matter had been precipitated, appeared to have lost its colour, I filtered it in order to procure the precipitate by itself. Indeed, the liquor had but a very slight yellow tinge, which, together with its simple saline taste and its being devoid of any metallic taste, would induce any one to suppose that it contained no gold. A portion, however, of this liquor, into which I poured a few drops of muriatic acid, immediately acquired a deep yellow colour, and afforded a considerable quantity of metallic gold by the sulphate of iron. I postponed the analysis of this liquor till another time, in order to proceed in examining the red precipitate formed by the carbonate of potass from the solution of gold. I commenced with washing this substance in boiling water, taking care to keep each washing separate, in order to ascertain more easily when the precipitate no longer contained any thing soluble; but although I made use of a very large quantity of water in proportion to the mass of precipitate, I could not divest it of its solubility, and it appeared to me that the last washings contained nearly as much gold as the first, which made me suspect that the precipitate was slightly soluble in water, and that by continuing to wash it, I should perhaps cause the whole of it to disappear. I therefore discontinued the washing, and slowly dried the precipitate; it lost much of its bulk, which proves that it contained a large quantity of water; by drying, it took an intense deep colour, resembling dried blood; by pulverising, it became of an orange yellow: 7,643 grammes of fine gold, precipitated in this manner, afforded only 5.414 grammes of red matter, whence it follows that 2.229 grammes of gold, or rather less than a third part, were contained in the mother water and washings employed.

Although I made use of an excess of carbonate of potass to precipitate the solution of gold, the red matter which I obtained by it did not sensibly contain any of this salt; for after desiccation it entirely dissolved in muriatic acid without producing the least effervescence, which proved that the precipitate had been deprived of the carbonate by washing, and that it did not contain any carbonic acid. But it was not the same with the muriatic acid. I was obliged to employ successively large quantities of nitric acid (as we shall see presently) to deprive that substance entirely of muriatic acid; then the nitric solution was no longer precipitated by the nitrate of silver. The presence of the muriatic acid in the first solution of the precipitate in nitric acid, made me suspect that it was in the state of muriate with excess of oxyd of gold; but the last solutions not containing any acid, it was more probable that the whole was simply an oxyd containing some particles of muriate, which had escaped the numerous washings the precipitate had undergone. But if the potass and the carbonate of this alkali precipitate, in the state of oxyd, a part of the gold dissolved in muriatic acid, why does it not precipitate the whole? How happens it that some remains in the liquor? and in what state does it exist there? This we shall inquire into by and by; let us now examine the properties of the oxyd of gold.

The oxyd of gold, prepared in the manner we have described, has a very sensible metallic styptic taste, and copiously excites an excretion of saliva, which continues a long time; bibulous paper, or any other porous combustible body, impregnated with it, burns with crackling and sparkling like powder. One decigramme of this oxyd minutely divided and agitated for some time with 60 grammes of distilled water, was not entirely dissolved; yet the filtered liquor, perfectly clear and colourless, afforded with sulphate of iron an abundant bluish precipitate, which proved to be metallic gold. This proves there was a solution of this substance in the water; but this solution might proceed from some portions of the salt remaining among the oxyd, for want of sufficient washing. I passed the undissolved portion through several successive quantities of distilled water, and I found in all of them gold in solution, but in smaller quantity in proportion as the washings increased. Although I did not dissolve the whole of the decigramme of this oxyd, apparently because the last portions of it were not in a sufficient state of division, yet I do not doubt, from the very little which remained, that if I had gone on with the operations, the whole would have been dissolved. What appears to prove this is, that the last washings, which still afforded very evident signs of the presence of gold by the test of sulphate of iron, gave no signs whatever of the presence of muriatic acid when tested by nitrate of silver. From these experiments it results, that potass, soda, and their carbonates, precipitate gold from its solution, in the state of oxyd; or, at least, if there is any muriatic acid in the precipitate, it is in an infinitely small quantity, when the washings have been conducted with proper care. The little solubility of this oxyd, and its easy decomposition, must render its action, as an oxygenating substance, speedy and certain upon the animal economy. The red oxyd of mercury, which possesses some properties in common with the oxyd of gold, such as its solubility in water, and easy decomposition, is endowed with nearly similar medicinal virtues; and we may conclude, from analogy, that the oxyd of silver possesses the same virtues. The nitric acid does not act on the dry oxyd of gold, unless the acid is in large quantity, and in a state of concentration; it is very different with the nitric acid, which dissolves it immediately; the nitric solution of gold has a brown colour; by the addition of water a floccy precipitate takes place, similar in colour to that produced by the alkalies. The first portions of nitric acid, which were used upon the oxyd, afforded a precipitate by the nitrate of silver, after the gold had been separated by water, but the last portions gave no precipitate; this confirms what I have said above. The affinity of the oxyd of gold for the nitric acid appears to be very weak, for by spontaneous evaporation a part of it separates in a metallic state; this is the reason why nitric acid alone will not dissolve this metal.

2. *Examination of the Liquor from which the Gold has been precipitated by the fixed Alkalies.*

I have already said that this liquor had no sensible colour, but that it became of a very deep yellow when muriatic acid was poured into it, and that it afterwards deposited an abundant precipitate of metallic gold by means of the sulphate of iron. Having evaporated this liquor by a very gentle heat, I at first obtained some crystals of muriate of potass, among which I discovered some crystals of the carbonate of potass, which had been added in excess; the liquor decanted from these salts, and again evaporated with the same precautions, was of a light yellow, and afforded a salt of the same colour, which had no regular form: some crystals of carbonate of potass, entirely colourless, were mixed with it. The coloured salt, well drained, produced no effervescence with muriatic acid, whilst those which were colourless, produced a very evident one, but their solution was not coloured. The coloured crystals, re-dissolved in water, copiously threw down metallic gold by the addition of sulphate of iron. The mother water of these crystals effervesced with muriatic acid, and afterwards precipitated metallic gold by means of the sulphate of iron.

These experiments seem to prove, that these crystals, as well as the mother water, contain muriate of gold and muriate of potass, united together in the state of a triple salt, and that the carbonate of potass exists in the state of mixture. It is therefore very probable, that if a sufficient quantity of muriate of potass was added to a solution of gold, as nearly as possible completely neutral, no precipitate would be produced from the mixture by the alkalies. To verify this opinion I made the experiment, but I obtained a precipitate by carbonate of potass, although much less abundant, and of a different colour and aspect than that obtained from a solution of pure gold.

Its colour was yellow, its form grained, and not flaky like the oxyd of gold. By examining this precipitate, I found it was composed of muriate of gold and muriate of potass, rendered less soluble by the presence of the alkali in the liquor from which it was separated. One very remarkable circumstance is, that after having precipitated a solution of gold by an excess of saturated carbonate of potass, if a quantity of acid is added to the filtered liquor, sufficient to decompose the alkaline salt, some floccules of oxyd of gold are separated; if, afterwards, the liquor is filtered, and muriatic acid is added to it, it again affords a precipitate by boiling, but the latter is a triple salt, similar to what I have spoken of. I believe that the precipitate which takes place from the solution of gold by means of the acid, is owing to a small quantity of this metal held in solution by the carbonate of potass. This effect is still more remarkable with caustic potass.

From what has been said, it is evident, that in order to precipitate the greatest possible quantity of oxyd of gold from its muriatic solution by means of the alkalies, it must be made in such a way that no superfluous acid remains in the solution, so that less of the triple salt may be formed, upon which the alkalies have no action. The oxyd is to be obtained by well managed evaporation to dryness. It follows also, from what has been said, that the liquor from which the gold has been precipitated by the alkalies should not be thrown away, because they still contain a great quantity of this metal. Artists and manufacturers often throw away many things which might be useful, for want of properly knowing their value. For many ages, jewellers have been accustomed to throw away the water used in certain of their operations, by which has been lost, in Paris alone, an annual sum of 300,000 francs. But since I have informed them that this water contains gold, and have pointed out to them the method of separating it, they preserve it with great care. I am, at present, occupied in examining the nature of gold, precipitated from its solution by metallic tin, which is also employed in medicine, and as soon as I have finished my inquiry I will communicate it to the Society.

On some Preparations of Gold lately employed medicinally: By A. S. Duportal, M. D. &c. and Th. Pelletier, Apothecary.

(Ann. de Chim. Vol. LXXVIII. p. 38.)

After having enjoyed some reputation as a medicine, gold had ceased to be administered to the patient, and taken an opposite direction. Lately, however, Dr. Chrestien, of Montpellier, a physician of great reputation and successful practice, has revived its use. He has employed it in syphilitic and lymphatic affections, and chiefly in Clark's mode. The preparations he uses are metallic gold in a state of minute division, oxyde of gold precipitated by potash, the oxyde precipitated by tin, and the triple muriate of gold and soda. These he considers as superior to mercurials. Some experiments by Mr. Vauquelin, on the preparations of gold thus introduced into notice, have already been given, and we shall now present our readers with some remarks on the subject by the gentleman above mentioned, one of whom enjoyed the advantage of a personal acquaintance with Dr. Chrestien, at Montpellier.

The first preparation of gold employed by this physician was the metal in a state of minute division. To obtain this, he formed an amalgam, by triturating leaf gold with seven times its weight of mercury in a marble mortar with a glass pestle, and then expelling the mercury by means of a powerful lens in the height of summer, or dissolving it out by pure nitric acid.

The present writers recommend rather to precipitate a solution of muriate of gold by a solution of sulphate of iron at a minimum, filtering, and washing the precipitate with water, acidulated by muriatic acid, in order to dissolve out the oxyde of iron mingled with the precipitated gold. When the gold is thoroughly dried, it is in the state of a deep brown powder, though in the metallic state; all metals losing their brilliancy by being minutely divided.

To prepare the oxyde of gold precipitated by potash, they direct one part of nitric acid at 40° [sp. gr. 1.396] to be mixed with four of muriatic acid at 12° [1.089]; and cupelled gold to be heated with eight times its weight of this menstruum in a matrass with a long, narrow neck, till it boils gently. When no more gold will dissolve at this temperature, the solution is to be poured off, and evaporated to dryness in another matrass by a gentle fire. The residuum of this evaporation is to be dissolved in distilled water, and filtered.

The filtered solution is to be treated with potash, to separate from it the oxyde of gold; but in this there are great difficulties, and the whole cannot be thrown down, without part of it being reduced to the metallic state. The cause of this is not known; but the authors ascribe it, 1. to the formation of a soluble triple muriate, which takes place when the potash is poured into the solution of muriate of gold: 2. to the excess of acid always present in this muriate: 3. to the more or less caustic state of the alkali employed: 4. to the greater or less quantity of this substance added to the muriate of gold.

When a solution of caustic potash is poured into a saturated solution of gold by muriatic acid, a yellow precipitate is formed,* which, when collected on a filter, does not amount to more than 40 grs. of oxyde from 72 grs. of the metal in the solution. The remaining liquid is of a very deep colour, and contains a triple muriate of gold and potash. A fresh quantity of the caustic alkali will cause no farther precipitation, unless the liquid be kept several hours in a gentle heat: but in this case, a new precipitate will fall down, extremely bulky, and of a deeper colour than the former, and apparently at a different degree of oxydation. Several weeks are necessary to complete the precipitation; and even at last a certain portion of gold will remain, which must be thrown down by a slip of tin, if we would lose nothing.

If the solution of gold be very acid, there will be scarcely any perceptible precipitation; and this might be expected, as the alkali finds a sufficient quantity of free acid, to form muriate of potash enough for the production of the triple salt. Indeed, no precipitation at all ought to take place, when the solution is extremely acid; but here, experience does not entirely agree with theory, for a very small quantity of oxyde of gold is always produced.

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* It is necessary to employ heat.

The causticity of the potash is of great importance: for if the neutral carbonate be employed, no change will take place without the assistance of heat. This, expelling a considerable portion of carbonic acid gas, will alter the colour of the solution from yellow to greenish. If it be then filtered, traces of the purple oxyde of gold will be found; and it will effervesce with acids, having its fine golden colour restored. A few drops added to a glass of water will not colour it; but, if the water be acidulated, the colour will instantly appear. The same solution yields by evaporation white, transparent, alkaline crystals, interspersed with black spots. These crystals dissolve in water without colouring it; and on filtering the solution it passes transparent, leaving a little gold on the filter. The addition of any acid, however, causes its colour to re-appear.

What is the chemical nature of the crystals obtained? Though this was not minutely ascertained for want of time, it appears certain, that they were composed of carbonic and muriatic acid, potash, and gold; but whether constituting a quadruple salt, a trisule, or two salts, one the triple muriate of gold and potash, the other subcarbonate of potash, the authors cannot say; nor could they form any judgment from the figure of the salt.

It may not be amiss to observe, that, in an impure nitro-muriatic solution of gold, saturated carbonate of potash will precipitate the copper, without throwing down the gold, if no heat be employed.

As too large a quantity of alkali, added to a solution of muriate of gold, will cause a portion of the precipitated oxyde to be redissolved, it is necessary to add the alkali cautiously, boil the solution at every addition of alkali, and separate the precipitate by filtration, whenever a sensible quantity appears.

The precipitate must be washed but slightly, it being partly soluble in water, as Mr. Vauquelin remarked; and it must be dried in the shade and in a cool place, otherwise it will be a mixture of oxyde and metallic gold.

It may be known whether the oxyde be pure, by treating it with muriatic acid, which in this case will dissolve it completely; but, if it be mixed with metallic gold, part will remain undissolved.

The oxyde of gold precipitated by tin, which Dr. Chrestien also recommends, may be obtained either with metallic tin, or with its solution.

For the first, slips of tin, well cleaned, are to be put into an aqueous solution of muriate of gold. These will soon be covered with a layer of pulverulent matter, of a colour more or less deep; will be renewed several times, after being removed. When this ceases to be reproduced, the liquor is to be filtered, and the precipitate washed in distilled water, dried in the shade, and powdered. This is the purple powder of Cassius.

If the oxyde of gold be precipitated by a solution of tin, it is of importance that the tin be in a fixed state of oxydation, otherwise the product will vary both in its nature and quantity. An uniform solution may always be obtained by dissolving slips of tin in muriatic acid at 12° [1·089,] filtering, evaporating to the point of crystallization, dissolving the crystals in pure water, and filtering again. Part of this solution should immediately be mixed with the liquid muriate of gold; and the union of the two salts produces a precipitate, which should be increased by adding fresh quantities of the muriate of tin, as long as any thing is thrown down; after which the precipitate is to be washed, dried and powdered. The quantity obtained, appears to depend on the quantity of water added to the solutions of gold and tin. The more they are diluted, the more the tin is thrown down. One drachm of gold, the solution of which was mixed with ten quarts of water, mixed with a very dilute solution of tin, yielded five drachms and an half of a very fine purple precipitate.

It does not appear to be a matter of indifference which of these two precipitations is used. When metallic tin is employed, the precipitate is brown; and the gold, if not in the metallic state, is nearly approaching it. On the contrary, the precipitate produced by muriate of tin at a minimum of oxydation, is of a deep purple colour; and, though it contains a little metallic gold, has much more of the oxydes of gold and of tin; whence, it is obvious, the efficacy of the two preparations cannot be the same.

The muriate of gold is so greedy of moisture, that it soon deliquesces, whence it can be employed only in the liquid state; and, as its great causticity renders even this difficult, Dr. Chrestien thought of uniting it with the muriate of soda; thus producing a triple muriate, less deliquescent, and less caustic.

For this purpose, a solution of muriate of gold in distilled water, obtained as described above, is to be employed; and, it is particularly important, that this salt has not an access of acid. Into this solution is to be poured an aqueous solution of pure decrepitated muriate of soda, so as to combine an equal quantity of the dry salt with the gold dissolved. The two solutions being mixed, the fluid is to be evaporated by a gentle heat in a glass capsule, taking care to stir it well toward the end of the process. When the mass is sufficiently dry, it is to be powdered while hot in a glass or stone mortar; and the powder is to be kept from moisture, which it attracts in a slight degree.

In this preparation the management of the fire is of great importance: for, if the desiccation of the salt be not carried far enough, it will contain too much acid; and if it be urged too far, it will be in part decomposed, and mixed with a little gold.

The enlightened physician, who extols the use of these preparations, employs them externally and internally; but recommends them to be mixed with other substances, lest their action should be too violent, if given alone. Thus, for a long time he did not give the triple muriate of gold and soda, otherwise than mixed with twice its weight of a powder composed of starch, charcoal, and the lake used by painters. As the alumine of the last, however, might take up a portion of the muriatic acid, and the charcoal might revive the gold, Dr. Chrestien changed this powder for liquorice root, orris root, &c.

Beside this, he joined the compounds of gold with extracts of the attenuant plants: sugar, with which he forms lozenges; syrups, in which he dissolves them, &c. He mixes them also with Galen's cerate, when he wishes to promote suppuration; and with lard, when he would employ them in frictions on the soles of the feet, after the method of Cyrillo.

The writers of the present article, do not approve the combination of the preparations of gold with these different substances, as all vegetable and animal substances, dissolved or not, revive gold from its acid solution. They recommend them to be given alone, or dissolved in distilled water: or, at least, if they must be mixed, to mix them as short a time as possible before they are used.

In this way Dr. Duportal asserts, that he has found good effects from them in syphilitic complaints. In a chancre corroding one of the corpora cavernosa he found them of real advantage: but the most striking instance of their efficacy was in cancerous ulcer, that had destroyed the upper lip, attacked the soft parts of the nose and left cheek, destroyed the square bones [os carrés,] and rendered the maxillary bone carious. Being called to a consultation with Dr. Payen on this very serious case, in which all the common methods had been tried in vain, Dr. Duportal hoped to oppose the progress of the disease by the use of Dr. Chreatien's medicine, assisted by attenuant extracts. In consequence, the patient was directed daily to rub into the gums the triple muriate of gold and soda; and to take oxyde of gold precipitated by potash, with pills composed of the extracts of white henbane, hemlock, and sharp-pointed toad-flax. The ulcer was daily washed with Sydenham's liquid laudanum, sprinkled over with powder of red bark and camphor, and dressed with a digestive, in which oxyde of gold was mixed. Under this treatment, which has been continued two months, gradually increasing the dose of the substances, the ulcer has assumed a promising appearance; the carious points have disappeared; the suppuration furnishes laudable pus in moderate quantity; the patient daily improves in flesh and strength; and there is every reason to believe, that this evident melioration will continue. That it cannot be ascribed to the means employed in conjunction with the preparations of gold is evident, for they had been used previous to these, without effect.

Observation on the Physiognomy of some Chronic Diseases.

By Dr. Dumas, of Montpellier.

[From the London Medical and Physical Journal, for January, 1812.]

Among the novelties of this period, we cannot leave unnoticed the "*Observations sur la physiognomie propre a quelques maladies chroniques*," by Dumas, of Montpellier. The speculative disposition of this physician has always given to his productions an interest of a peculiar cast; but, though constantly ingenious, they have, generally, a coloring from imagination not perfectly according with a cautious investigation of facts, and a philosophic inquiry for truth. This we conceived to be remarkably conspicuous in his essay on the property which the different organs of the human frame have of being transformed into each other. In the instance before us we are, however, willing to believe that, as the conclusions are deduced more immediately from palpable appearances, and as the foundation of the principle lies more on the surface, and the results being less dependant on the feelings and descriptions of the patient, it may approach to that decisive character which *should* mark the whole of pathology.

According to M. Dumas, the physiognomic marks of phthisis pulmonalis are, a shining brightness of the eye, with a prominence and red tinge of the eye-ball, a lengthening of the line between the orbits, a hollowness of the temples, and a sinking of the cheeks. A wan and waxen hue of the countenance, a languor in the eyes, a tarnished whiteness of the cornea, with a bloated distention of the skin, are the principal traits of the hydropic physiognomy, which is strongly marked in the pictures of Gerard Dow.

In hydrocephalus, the eye is thrust forward from the orbit, and half of it is hid under the eye-lid, giving a decided character to the face of those laboring under this disease. The visage seems enlarged, dilated, and altered from its natural shape, in venereal affections: a livid hue, faded eyes, discolored and hardened skin, give an expression of languor and dejection to the syphilitic physiognomy.

The scrophulous diathesis is marked by an enlarged head, particularly about the occiput; by prominent cheek bones; by a full and bloated visage; by a projecting squareness of the lower jaw, and an extended outline of the chin. Large lips, thickened eye-lids, wild, melancholy, and sometimes haggard eyes, the cornea of which have a bluish transparency, and their pupils dilated, fill up, as M. Dumas says, the strumous physiognomy.

To the arthritic physiognomy, a character, fixed and determined by certain rules, cannot be assigned: but it is considered by this ingenious physiologist, to have the greatest affinity with that expression of eye indicating a dull internal pain, and an air of languor and debility, which appears in the female countenance about the period of menstruation. The characteristic signs of some chronic complaints are asserted to be marked with such precision, as to determine with great exactness the nature of the disease. A chronic diarrhœa, a long-continued dysentery, obstructions of the liver and abdominal viscera, scirrhus and ulcer of the uterus, cancer, and general cachexia, are examples.

There is a permanent character arising out of the anatomical state of the parts, which determine the particular physiognomy of nervous diseases, and which is best marked when the specific cause arises from malformation. M. Dumas speaks of the following as permanent in many morbid states, but which cannot, however, be said, all of them, to arise from organic defects. An effect resulting from a combination of pallid, dark, and yellowish tints, proper to the melancholic temperament, give to the physiognomy a character of sadness and suffering, finely expressed in the Antinous of the Capitol.

Lavater has given the portraits of two hypochondriacs, whose appearance was so changed by their disease, that they were hardly recognised as the same persons. Their eyes were sunken and haggard, and their whole physiognomy expressing that painful constraint which oppresses the vital functions in hypochondriasis. Mania presents a different expression according to the species of the disease: but it is always characterised by a combination of determinate traits. The researches of physicians have decided that there are specific marks characterising the different kinds of mental alienation.

The general character of the maniacal physiognomy consists in disordered and irregular lines, having an analogy with incoherence of ideas. Idiotism, however, shews itself rather by a regularity of visage, but cold, motionless, and inanimate; the face generally being of a proportion too large for the cranium. In one species of intellectual imbecillity, that arising from hydrocephalus, and where the faculties of the mind seem totally obliterated, idiotism is connected with an enlarged cranium, evidently made so at the expence of the face.*

The physiognomic character of epileptics more particularly drew the attention of Dumas. An examination of many persons suffering under this disease, enabled him, from actual admeasurements, to point out the peculiarities in the shape of the head which decide the epileptic physiognomy. A disposition in the muscles of the face to convulsive motions; lowering eye-brows, palpebræ nearly closed; projecting, fixed, shining eyes, with their pupils turned in opposite directions, give the obvious marks of this physiognomy. But, above all, he says, a peculir facial angle distinctly impresses a character on the general physiognomy of the constitutional epileptic, or those whose disease arises from some organic defect in the brain. This peculiarity is a lowered proportion of the facial angle, which is always observed to be under 80 degrees. It is remarked, that there is a singular affinity between the facial angle of the greater number of epileptics and that of the negro, each receding from 80, and approaching to 70, degrees.

In 1804 and 1805, M. Dumas measured the facial angle of many epileptics in the hospital at Toulouse: four among these had it from 70° to 71°; three from 71° to 72°; and in one it was found below 70°. It is a practical fact of importance, and which we hope will be confirmed by additional observation, that, in those cases of epilepsy which are curable, the facial angle always approaches to 80°; and in those which arise from organic defect in the brain, and are consequently incurable, the facial angle is lowered to 72°; and even, in some instances, below 70°.

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* The brain in hydrocephalus will be in a state of compression, notwithstanding the increased volume of the cranium, from the accumulation of fluid, as much as if the bony structure had too small a dimension.

We are not convinced that the principle of M. Dumas may not be applied to many acute diseases; or that diseases, generally, do not give a distinct character of countenance, or, as this physician expresses it, a physiognomy peculiar to each. If the violence and termination of morbid affections are, from this source, occasionally obvious to superficial observers, what may not be expected when persons of talent, capable of discriminating and selecting, apply earnestly to the subject? The pencil will afford an auxiliary of immense importance; and, as a faithful and chracteristic portrait, will, probably, depend on a few lines happily caught; when these lines are well understood, much of the difficulty will be vanquished. No branch of medical science seems so perfectly untouched as this; nor so likely, when executed with sufficient precision, to bring the reward of REPUTATION.

SELECTED REVIEWS.

Clinique Chirurgicale, ou Mémoires et Observations de Chirurgie Clinique, et sur d'autres Objets relatifs à l'Art de Guerir. Par Ph. J. Pelletan, Chirurgien consultant de L. L. M. M. L. I. et R. R. &c. Chirurgien en chef de l'Hotel Dieu, &c. &c. &c. 3 Tomes, 8vo. Paris, 1810.

[From the London Medical Review, for April, 1812.]

There are but few surgeons who can affix to their names so many adjuncts of titles and places as Monseigneur Pelletan. The title page is adorned with about twenty, and the list concludes with an intimation of his being a member of other learned societies, "*nationales et etrangeres.*" He informs us at the end of a lively preface, that they are given as proving the sources from which his experience was derived. "But the titles the dearest to my heart, are those which I owe to the munificence of the hero who governs us." After a few more flourishes about his ardent admiration of the glory and goodness of this greatest of heroes, he finishes with an exclamatory wish that his happy posterity may equal in number the stars of the firmament, &c.!!

He appeared so full of his patron's generosity, so overcome with the favours of being appointed surgeon extraordinary to their imperial and royal majesties, a chevalier, and a member of the legion of honour, that we felt alarmed, lest he should burst out into some rapturous apostrophe to his majesty, whilst discoursing in his first memoir on the ticklish theme of cutting throats. We were happy to find however, that when engaged in illustrating a point in surgery, he became a very surgeon; and never turned from the path of his own experience, but to examine for a moment the practice of others on similar occasions. He is a little smart sometimes in his criticisms, but they appear impartial; they are on acts and not on the actors, and they always tend to throw light on the subject in hand.

M. Pelletan is now growing old in the exercise of his art. He appears to have made some use of the very ample opportunities which his reputation have placed within his reach. The fruits of his experience are now before us. He publishes them to discharge a duty which he thinks he owes to his successors. It is a duty which he owes in common with every medical man, who, like him, has enjoyed the advantage of great opportunities, has talents enough to turn them to good account, learning sufficient to know what is really new to his profession, and discretion to leave unsaid what has been already well told by others.

The author communicates his observations in the form of memoirs, taking for his models what are indeed chefs d'œuvre of the kind, the memoirs of the royal academy of surgery. His subjects are the most important and interesting in surgery. He professes not to give complete treatises on any topics, but all the new and useful matter that he could draw from his own sources. The whole work is written with clearness and spirit, if we except a few instances of a little garrulity, which may well be pardoned in a Frenchman, who tells us he has held his tongue for forty years. It bears the character of close and original observation, and forms certainly the most valuable present in surgery which we have received from our neighbours, since the publication of the surgical works of Desault. From this consideration, as well as from the comparative rarity of foreign books, we shall best perhaps consult the interest of our readers by going briefly through the whole of the contents of these volumes.

The first memoir is on bronchotomy, an operation rarely required and still less frequently performed. It is not often that the patient, or the patient's friends can be brought to consent to the performance of an operation, which to common minds has in it something peculiarly dreadful. Nothing probably but great firmness on the part of the surgeon in pressing it will ever prevail. In order to give him that steady confidence in the resources of his art in the hour of difficulty and distress, nothing will contribute so effectually as a knowledge of cases in which the operation has been performed with success by surgeons of high character for judgment and experience.*

It is most urgently called for in the case of foreign bodies in the windpipe. It may also become necessary in other cases for the purpose of giving a passage to air. It is performed by making a small transverse cut between two of the rings of the trachea; or between the cartilages of the larynx; or by making a longitudinal incision through either of these parts. The author prefers the longitudinal division in every case. To give passage to air, he makes it through the trachea; to remove foreign bodies, through the trachea or larynx, according to the situation in which they will most probably be found.

M. Pelletan has given in detail several cases in which he has himself performed the operation with various success; six in which he made an opening for the purpose of disengaging foreign bodies which no effort of the patient could reject. It is we believe very rarely that any body which has once dropped into the trachea, has been thrown up again through the irritated and constricted glottis. It is most commonly in these violent convulsive coughs that the patient suddenly expires. On the other hand we know from experiments which have been made on brutes, as well as from the cases in which this operation has been performed on the human subject, that the foreign body, if loose, is forced almost instantly through the wound, if large enough to admit of its passage. If not, no search is necessary, as it speedily presents at the opening, and may be seized without difficulty.

In the first case, in which a bean fell into the trachea of a child, the author performed the operation on the fourth day, but it was too late to save its life; the bean was thrown out with violence, and the patient for a time relieved. In a similar case he operated on the third day; the bean was forced out at once, and the child recovered. In a third instance in which a pebble was lodged in the windpipe, the case had been treated for twenty days as one of simple inflammation of the lungs. The opening was made, and by laying the child flat, the stone was presently thrown out. He was at once relieved, but never recovered the effects of inflammation, and died phthisical at the end of eight months.

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* For some excellent observations on this subject, see the 1st, 4th, and 5th volumes of the Memoirs of the Royal Academy of Surgery; and also a memoir in the second volume of the works of Desault, who, in some cases, to allow of respiration, passed an elastic gum tube into the trachea from the nose, instead of making an opening into the trachea.

In the other three cases a foreign body was impacted in the larynx, and it became necessary to use further means in order to disengage it. In a child our author made a long opening into the trachea, but nothing presented itself. The symptoms came on whilst the child was biting the head of a fish. A stilet wrapped round with oiled linen was then passed up and down the larynx several times without causing much irritation, and the child continued to breathe freely through the tracheal aperture. The body was presently brought to the opening, and extracted. It proved to be part of the jaw of the fish with many sharp teeth in it. The child soon recovered. A young man was supposed to have had a button mould in some part of the windpipe for six weeks; and pointed to the larynx as the seat of his uneasy feelings. From an opening in the trachea, the button was felt by the finger, but could not be withdrawn. The cricoid cartilage was divided, and the button was easily taken out of the left ventricle of the larynx. He was cured. A case very similar is related in Desault, in which a cherry-stone was lodged in the same place. The patient would not consent to an operation, and died after two years, "*d'une phthisie de larynx.*" In the last case a portion of tendon of veal was supposed to be fixed at the top of the larynx. It could not be disengaged by the finger, or by an instrument passed in from the mouth. The author divided the thyroid cartilage, passed up his little finger, and displaced it without knowing that he had done so. The patient was at once relieved.

If the substance be small and smooth, it sometimes remains loose in the trachea for a considerable time, producing only occasional fits of suffocation with intervals of ease. But the case can only be relieved by an operation; and to temporise, is only to increase daily the probable chance of fatal consequences. If the obstruction is of long continuance, or if it exist to a great degree, we have not only inflammation of the trachea, but great congestion about the head, which after the removal of the foreign body still requires active treatment for its removal. In the first case, where the patient died, the vessels of the brain were much loaded.

The author relates some other cases in which he performed the operation to give a passage to air. In one the patient was choked by a small polypus attached to the side of the glottis; and he was called too late to recover him. In another the woman was dying, suffocated by a chronic thickening of the membrane of the larynx. The operation was of no use. In a third, a child with enlarged tonsils of some years duration was attacked by inflammation of the throat, and respiration was so much impeded as to reduce him to the last extremity. He was relieved for a short time by the operation, but at the time of its performance was comatose with a faltering pulse, so as to remove all expectation of his recovery. In similar cases our author advises that the operation should be performed at an early period of the attack.

The only case of croup in which he thinks the operation could be of service, is where the disease is confined to the larynx; a rare case we must suppose, and one of which the diagnosis must be difficult. In every other case M. Pelletan agrees with the best writers on this subject, that the operation would be not only useless but injurious.

We have seen the trachea opened in order to inflate the lungs in a case of suspended animation; and we believe that the operation is still occasionally performed for this purpose. It is however worse than useless, as a curved tube may be passed into the trachea from the mouth or nose. Pelletan passed it from the mouth; and it is the only case in which he thinks tubes can be used with advantage. He rather ridicules the plan of passing a tube through the nostril either into the trachea, or œsophagus, which it is well known was particularly recommended by Desault. Where the finger can be passed far enough back to touch the opening of the larynx, as in infants, it may certainly be passed into the trachea with most ease from the mouth.

Our author deprecates the practice of passing instruments into the œsophagus, when the foreign body is in the larynx or trachea. In some cases, especially when the body is loose in the trachea, the symptoms are so strongly exhibited as to leave no room for doubt. But it is no less true that the urgent symptoms of suffocation which sometimes attend the impaction of foreign bodies in the gullet, cannot in every case or at the instant be accurately distinguished from the choking caused by a body fixed in the larynx. Every surgeon therefore in a doubtful case should endeavour to examine the pharynx, or to pass an instrument down the œsophagus. The case has happened where a surgeon made an opening into the trachea, when the cause lay in the œsophagus. The patient died unrelieved. In such a case Desault would have passed an elastic gum tube into the trachea, to allow of respiration until the œsophagus was examined, or the body removed. Again, there are other cases on record of hard bodies lodged in the pharynx or œsophagus, in which an opening made into the trachea by the surgeon has saved the patient's life.

Whatever be the occasion for which bronchotomy is performed, one point would appear determined by the cases before us, which is, the safety of making a longitudinal opening into the trachea. There is no instance recorded amongst them of bleeding of consequence enough to stop the operation for any time, or to interfere seriously with the relief it afforded. All that appeared necessary if the bleeding continued after the aperture was made, was to leave the wound open for a time, to allow the free expulsion of the blood from the trachea by coughing. Yet M. Pelletan divided several of the rings of the trachea; he must have cut through some considerable veins; and in the case of the young man with the button in the larynx, he must have cut through the vascular thyroid gland at the narrow part which unites the lateral portions. Desault preferred opening the larynx to the trachea, on account of the greater facility with which it might be done, and more particularly because there was no risk of dangerous hæmorrhage. In one case, of a child who had a bean in the trachea, the operation was deferred for some time, from a fear that the child would be choked by the blood which flowed freely from the first incision. Before however the blood was stopped, the child died by suffocation from the bean. Pelletan here has gone beyond this great master. His judgment and his boldness have encouraged us to prodeed at once to opening the trachea where the danger is pressing. If the case is not urgent it will certainly be better to restrain the bleeding before the incision is made into the trachea. The loss of blood is probably in itself a benefit, or it might in some measure be avoided by using the handle of the knife chiefly, after freely dividing the skin.

In children, in whom the trachea, though exposed, is more than proportionally small, and not easily fixed, and the throat often fat, if the surgeon is wanting either in coolness or steadiness, he may fail of his object, or with the point of his knife he may endanger many important vessels. However, granting that no danger is to be apprehended from bleeding, the operation here recommended is much to be preferred to the transverse opening, in the case of foreign bodies in the trachea. Our author prefers it also when the section is made merely for the purpose of giving a passage to air. It is not so liable to be plugged up with mucus; it dispenses with the use of a canula or tube of any kind; and the wound heals more speedily. It may be added also that a longitudinal opening into the trachea excites less irritation, and does less injury to the voice than any opening into the larynx. The presence of a canula excites violent and repeated efforts to expel it by coughing, so that it is often in vain that the surgeon endeavours to keep it in its place. He exemplifies the comparative quickness of the healing of a longitudinal wound by the length of time necessary for the cure of transverse wounds in persons who have cut their throats. And the memoir concludes with several of the latter cases, some of them interesting, but not much in point with respect to the question under discussion. Without having recourse to such elucidations, he would have found no difficulty in persuading us of this fact; or that a large transverse wound through the front of the neck and the trachea is always followed by some impediment to the free motions of the larynx.

The second memoir is on the subject of internal aneurism. Where it is possible to apply a ligature on an artery between the seat of the aneurism and the heart, the case is generally within the reach of surgery. From the judicious boldness of surgeons in this country, the practice has been of late carried to a much greater extent than was supposed possible by theorists, and far beyond what the boldest operator even but a very few years since would have dared to venture. We are not prepared to say that arteries of larger size may not be tied, and even nearer to the heart than has yet been attempted. But there are many cases which the knife and the ligature cannot reach; and which are generally considered as irremediable, either from their situation, which precludes any operation, or from the vital importance of the artery itself. These are left to advance to a fatal termination; or if any plan of cure is proposed, so little expectation is there of any successful issue, that it is carried on with hesitation and soon altogether abandoned.

It is well known that Valsalva advised in such cases a mode of treatment by bleeding, perfect rest, and a starving diet, by which he is said to have succeeded in alleviating distress, and in retarding the increase of the aneurism in some instances, and to have caused all symptoms of the disease to disappear in others. The same method has been now and then put in practice by others: but it has been done with faint hopes, and failing resolutions, and more with a view to protract a miserable life than ultimately to remove the disease. Valsalva's cases are often quoted, but it is more to doubt of their truth, than to adduce them as examples to be followed. Mr. Allan Burns evidently gives no credit to the accounts, and supposes Valsalva to have deceived himself. He asserts, that in no case of internal aneurism is it possible to cure the disease. He gives however no facts to prove the inefficacy of the plan, nor does he appear ever to have put it in practice.

From the obscurity of the symptoms at the commencement it is often difficult to determine the existence of internal aneurism at the time it is most susceptible of cure. It is a case therefore which particularly demands close attention and accurate knowledge on our part. It further requires from us for its cure, a constancy in our purpose, and from the patient a confidence in our judgment, to induce him to submit with patience to dicipline so severe. The intent of the treatment is to reduce the patient gradually to as extreme a degree of weakness as is possible without imminently endangering life. It is done by absolute rest, a rigorous diet, and bleeding; to these means M. Pelletan adds the external application of ice, or cold and astringent washes, &c. He has here detailed many cases from his own practice, of partial or complete success, which cannot be too generally known, as they may be the means of creating in some, and of confirming in others a good opinion of the only method of treatment which has been found at all efficacious in a dreadful and not unfrequent organic disease.

Of the cases here recorded, some appear to have been cured; in others the treatment had marked good effects. In extreme cases, at best it afforded but partial and temporary relief. We can notice but a few of these cases, which are in every respect highly interesting. In one, a robust man, an aneurism at the root of the aorta with a pulsating tumour of the size of an egg projecting between the ribs, (the edges of which were already partly absorbed,) was reduced so as to recede within the ribs in the course of eight days. At the end of this time the patient refused to submit any longer. The tumour did not appear again for nearly a year, although he returned to very drunken and irregular habits. He died in about two years and a half, with the tumour again appearing, and much increased in volume. The aneurismal sac communicated with the aorta by a smooth and round opening, opposite to one of the sigmoid valves. There can be no doubt of the efficacy of the treatment in this case; and it is highly probable that his health and his life might have been long preserved but for his own indiscretion. In a case somewhat similar, but not so far advanced, the patient appears to have been cured. There was a swelling on the right side of the breast, about six inches in circumference, with a very strong beating. The pulsation was accompanied by a pain which stretched towards the scapula, and the occiput. It was evident that the disease was an aneurism of the great arch of the aorta. The patient was a crier of a strong frame, who was accustomed to drink freely. In the four first days he was bled eight times, drawing three dishes "palettes" in the morning and two in the evening. On the fifth, the pains and the beating were much lessened, but the pulse was still full. He was again bled once. The pulse was in a favourable state as to strength till the seventh day, when it again rose, and the man was twice bled. During this time the patient was kept to a most rigorous diet. A cold poultice of linseed and vinegar was placed on the tumour, and renewed when it became warm. At the end of eight days the good effects of this plan were very evident; the pain and the pulsation were gone. The patient, though weak, was in health, and tranquil. He was now allowed more food by degrees. At the end of four weeks from the commencement of the treatment he left the Hotel Dieu well. He afterwards led a sober life, became fatter than before, without any vestige of disease, except a slight and deep pulsation at the part in which the aorta may always be felt beating in its natural state. He died two or three years after of another complaint. His death was not known, and the body was not examined.

We have room only to notice one more case of a large aneurism of the axillary artery. The author considered an operation out of the question: and certainly, in some advanced cases, the difficulties of tying the subclavian artery, are almost insurmountable. We have seen in such a case a natural cure effected, when nothing was expected but the death of the patient. But in the present instance there can be no doubt but that the disease was overcome by the active means employed. On the thirteenth day the patient was reduced to a degree of weakness which much alarmed many of the observers. From that time all pulsation in the tumour ceased. The contents were gradually absorbed; and the patient returned to his former laborious life, with his arm as strong as ever.

The next memoir on external aneurisms we shall examine at the same time with another on the same subject in a future part of the work. It is followed by some observations on tumours remarkable either from their situation or their nature. The object is to encourage us to operate in some cases, and to warn us against making the attempt in others, where the evils of an operation far exceed those of the tumour.

Six of the cases are of tumours in different parts of the pelvis, which were removed by operations. Some of them were moveable, and loosely attached; and were easily removed by dividing the vagina which was stretched over them. In one case the tumour was of a cartilaginous nature, and had its origin from the descending ramus of the pubis. In a case of encysted tumour seated high in the pelvis, Mr. P. made a large opening into the sac from the vagina. The sac did not fill again, and the patient speedily recovered. Some of these tumours had occasioned considerable inconvenience, and had injured the health of the patients from the irritation they excited. In all, the operation was easily executed, and the cure soon accomplished. We have reason to believe that tumours in the pelvis are not of unfrequent occurrence, and that they have been allowed to remain in many cases in which they might have been removed with facility. Mr. Park mentions five cases which came to his own knowledge, of tumours in the pelvis obstructing labour; and one case in which a tumour occasioned much distress and danger from its locality, when the uterus was not impregnated.

There are several cases given of loose fatty tumours of large size which were easily removed from different parts of the body. Indeed so slight is their attachment in parts where the cellular membrane is abundant, and so small are the vessels which enter them, that very large tumours of this nature may be removed with perfect safety from the neighbourhood of large vessels, or other important parts. The author relates one case of a removal of a fatty tumour which extended from the larynx to the spine of the scapula, passing under the sterno mastoideus muscle. We have seen tumours of a similar nature removed from the front of the neck with surprising facility, which left exposed, and dissected as it were all the deep seated parts lying betwixt the larynx and the jaw. These tumours are so loose, that when the skin is turned back, they may be drawn out, and the connecting cellular membrane divided on them without the least risk of cutting any part of consequence. The only danger to be apprehended in the removal of such tumours, wherever they are seated, arises from the extent of surface exposed, and the want of power in the patient to heal the wound, after the shock of such an operation. M. Pelletan gives one case of this kind, in which a tumour weighing twenty two pounds was removed from the side of the chest. The operation was long only from the extent of the surface to be dissected. But the patient who was sixty years of age, never rallied, and died on the seventh day.

There are no other cases of much interest, excepting one with an account of which we shall conclude the tumours. It is a case of a bronchocele removed by the knife. Of the three cases mentioned by Gooch, two died from bleeding, in one of whom the operation was left unfinished; and the life of the third was only saved by constant pressure with the hand for eight days. From the older surgeons we have many similar histories. We have no fear in the present day that the patient will die of hæmorrhage. The arteries may always be secured. But the length and pain of the operation in cautious hands, and the deep disturbance of so many important parts, are more than most patients can bear; and the event at best is more doubtful than the occasion warrants. We cannot now enter on the propriety of removing the thyroid gland when it is the seat of a disease in itself neccessarily fatal: we are considering only the case of bronchocele; and we know not that in such it is ever justifiable. If the tumour from its size should seriously impede the functions of neighbouring parts, it will be from the same cause almost impossible to remove it with ultimate safety to the patient. We should not have said so much, but that this is the age of enterprise in surgical operations. We know that the gland has been removed with success,* and we want not experiments on brutes to prove its possibility. If any operation is called for, we should much prefer exposing and tying the arteries which are enlarged, to dissecting out the enormous tumour.

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* Vogel, Theden, Desault.

The case here related terminated fatally. It is a striking contrast to the case of fatty tumour above noticed. There was no bleeding of consequence. The arteries were secured as they were successively exposed during the operation which lasted an hour and a half. But the patient was struck down by the shock of so long and painful a dissection, and died in thirty five hours. The tumour weighed two pounds six ounces. The author adds that he shall always reproach himself for having assisted in an operation which so justly deserves the name of cruel.

The memoirs on external aneurisms bear the same character as those we have already noticed. They contain valuable cases narrated with a particularity which is by no means irksome. The author is sometimes a little prolix in detailing his opinions, which do not appear to us to be always borne out by the cases on which we are to suppose they are founded. But the histories of the diseases are in general given with spirit, and with a familiarity of expression which at once convinces us of their fidelity. In the first of the memoirs before us, the reader will find many cases possessing much interest, and well deserving of being recorded. There are others which may, perhaps, appear somewhat "stale, flat, and unprofitable" to an English reader, who contemplates the rapid advance which within a few years has been made in his own country, in this important branch of surgical practice. Certainly the perusal of the memoirs on external aneurisms has tended strongly to confirm in us an impression of the comparative pre-eminence of our knowledge and our practice on this subject.

In cases of popliteal aneurism, M. Pelletan still prefers the operation in the ham, where there is reason to apprehend that the aneurismal deposit will not finally be absorbed. When it is probable that it will give rise to sloughing or ill-conditioned abscesses, he thinks it far better to lay open the whole of the tumour, and wash out its contents, filling the cavity with lint. Hunter's operation he prefers, when, from the nature and condition of the aneurism, he thinks that absorption will most probably take place; and more especially when the aneurismal tumour is at a distance from the spot in which the operation is performed in front of the thigh. As the foundation of these opinions he gives some cases in which the patients died from a subsequent suppuration in the aneurismal tumour; and one in which the patient was destroyed by hæmorrhage from the femoral trunk in consequence of abscesses communicating with the aneurism in the ham.

The serious danger which is likely to arise from a communication being formed between the wound in the thigh, and the contents of the aneurismal sac, may in a great measure be obviated by tying the artery at a great distance from its diseased portion in the upper part of the thigh. It is to be prevented also by procuring the healing of the wound by adhesive inflammation. With regard to the other objection, we know that patients have died from sloughing, or suppuration of the aneurismal tumour after the operation, but we have also seen absorption take place when the tumour has been almost in a sloughing condition before the operation. If the swelling is advanced to the stage in which its bursting is inevitable, it is not in a state most surely in which it would be adviseable to lay it open, and to attempt the ligature of the artery above and below the sac. The author, in the cases which terminated fatally, opened the tumour in the ham at some distance of time after the operation. It may be thought that he acted injudiciously in so doing. But it is probable that the tumours would very soon have burst, as they had gradually increased in size, and became softer and more painful after the operation, though all pulsation in them had ceased from that instant. The nature of their contents at the time of opening them fully proves also, that the resolution of the swelling was not to be expected, whilst the health of the patient was daily suffering from its presence.

The great success which attends the performance of Mr. Hunter's operation in the present day, and the happy extent to which the principle has been carried in operating on aneurisms of other arterial trunks, are circumstances strong enough to convince any unprejudiced person of the superiority of the practice to that of laying open the aneurismal tumour. We may safely therefore, appeal to facts, without taking into consideration the many sound reasons which led to a trial of this mode, when its success was yet problematical. It is to us a matter of surprise that M. Pelletan should still hesitate, and even adhere with a kind of parental fondness to the severe and hazardous operation in the ham, which it seems he was the first to perform in France, the usual practice in popliteal aneurism being, before his time, the amputation of the limb.

In the course of this memoir, the author discusses the subjects of making a single, or double ligature, and dividing the artery in the interspace; and of tying the artery on the distant side of the tumour in some particular case of aneurism. But he evinces no great degree of knowledge on these points, nor does he adduce any facts which have novelty, or any arguments which have ingenuity to recommend them.

In the second and third volumes, the author gives at considerable length the histories of some particular kinds of aneurism, and of bloody tumours analogous in their nature to aneurism; and also of some aneurisms remarkable chiefly from situation and extent. The cases are mostly of importance, but they are not well arranged; and some of them, perhaps, are incorrectly placed here, as they do not in their nature, or in the means required for their cure, at all resemble aneurism. It would be better, whilst we remain in ignorance of the structure or formation of a morbid swelling, not to confuse it with those of which the history and treatment are simple, and well understood.

In the year 1786, M. Pelletan proposed, and was prepared to tie the artery below the clavicle in a case of axillary aneurism. His intention was to divide the clavicular attachment of the pectoralis major, but he was over-ruled by the surgeons present, who thought is best to include the muscle in the ligature with the artery. The curved needle was pushed in at a venture, but as might be foreseen, did not surround the artery. The tumour underwent no alteration, and the patient died a few weeks afterwards. On dissection the practicability of the operation proposed by the author became very evident. The artery was readily exposed above the aneurism, and might have been secured without difficulty, and with little disturbance. In another case of axillary aneurism no pulsation was perceptible, and the tumour was at first punctured as an abscess. From the size of the tumour the shoulder was very much elevated, so as to render it impossible in the author's opinion to tie the artery above the clavicle: from the situation of the aneurism there was not room to do it below. The covering of the tumour sloughed, and the patient died from hæmorrhage. On dissection he found a dilatation of the artery of no great extent, with an evident rupture in the dilated part, and an extravasation of blood constituting the tumour. Below the aneurism the artery was obliterated for a considerable space.

In a case of extensive vascular dilatation of the arterial branches on the side of the head and face, M. Pelletan attempted a cure by a methodical compression of the external carotid artery; but the patient was unable to support the pain even for a short time. He then made a very awkward attempt to tie the artery in front of the ear. His patient was unruly and the needle passed through the vessel. Still this particular ligature, aided by compression, had a manifest effect in diminishing the pulsation in the branches above it. The patient soon after died suddenly from another cause. M. Pelletan relates also another very similar case, in which the patient refused to consent to his proposal of tying the carotid.

In the nævi materni, or vascular tumours of infants, which may be termed congenital aneurisms by anastomosis, the author has employed compression with much advantage. The success of this mode if well conducted, is we believe generally acknowledged, though it is not, perhaps, so frequently adopted as it deserves to be. In a case of this kind the celebrated Morand divided the tumour which was situated on the forehead. To restrain the profuse bleeding which followed, he employed very strong caustics. The child was seized with convulsions and died. On examination a deficiency was found in the frontal bones opposite the tumour, and the dura mater beneath was highly inflamed.

In some of the cases M. Pelletan describes a disease which he terms aneurism by erosion, and which he compares with that described in the well known case related by Mr. Pott. Two of these from the picture he draws of them appear very like what we have in this country classed under the name of fungus hæmatodes. There is however, yet no little obscurity in the history of this most formidable malady; and we should be aware that from a wish of simplifying disease we may be too hasty in generalizing, or classing under one comprehensive title, diseases alike in their intractable nature, but in many points dissimilar. We cannot here notice any other of the cases, but we may observe that although the treatment pursued by the author in many of them, does not always accord with what we have been taught to consider as the best, and does not impress us with any very high ideas of his knowledge in this part of surgery, the cases themselves are valuable on many accounts. They generally possess much interest, and are many of them such as fall to the lot of few to observe. No opportunity is neglected of illustrating the real nature of the disease by minute dissections. Nothing is concealed. He acknowledges throughout his work, what he considers errors in his practice, as openly as he plumes himself on his knowledge and skill. In our opinion he deserves the thanks of the profession for the publication of many important facts, which he justly considers of too much importance to be allowed to die with him.

The remaining memoirs in the first volume are on the subjects of obscure syphilitic diseases, and forensic medicine, "*medecine legale.*" In the first the author advances some opinions which by many of our readers will be regarded as old fashioned, and utterly exploded. They are given here as the result of long experience, and careful observation; and they will be read with interest by those who think with us, that although much has been effected by the acuteness and good sense of Mr. Abernethy, much yet remains to be done to complete the investigations into the nature and cure of those multiform diseases, which in some of their characters often resemble syphilis, though the accuracy of modern pathologists has shown that they differ from it in others. M. Pelletan endeavours to prove the influence of a syphilitic taint in the constitution on many complaints which are on that account only both obstinate and severe; the continuance of such a taint in the habit, whether observable in the individual, or only in the children of a mother to all appearance sound, and the return of the syphilitic symptoms after many years of apparent health and freedom from the complaint. The remedy he has employed in these supposed secondary, or as he terms them, chronic forms of syphilis, is the oxy-muriate of mercury; and from the accounts before us it would seem with marked success. The cases are taken from the author's private practice; and the subjects of many of them are individuals whom he has been able to watch for a long series of years, and with the previous and subsequent histories of whose lives he was familiarly acquainted. He observes that little can be learned from hospital practice in these cases, as in general our patients are quickly passing visitors of whom we know nothing, and whom probably we never see again.

The memoirs on forensic medicine contain nothing which we can well extract. They place the author in a favourable light; and they are of value as exhibiting by actual occurrences the great necessity of caution in our reports. In truth there is no part of the important duties resting on our heads which requires from us more ready and accurate knowledge, or more impartial and dispassionate investigation than one in which the life and the honour of individuals depend sometimes wholly on the evidence we are to give. General directions as to our proceedings can be but of little use, where every case has its peculiarities. A just man will never forget the wide difference between uncertain, variable opinions, and demonstrable facts; and the man of science will be ever ready to distrust his own judgment, if he is not conscious of possessing a thorough knowledge of the subject under inquiry.

The next memoir on effusions of blood is divided into several parts, according to the different terminations of this accident. The author considers the decomposition of the effused blood to be the principal cause of all the train of bad symptoms which occasionally follow it. And he endeavours in these observations to prove the correctness of his opinions by a variety of cases; some shewing the little disturbance produced by very considerable effusions if no decomposition took place; and others the dangerous consequences which invariably followed if from any cause a decomposition was effected. He examines also the various circumstances which immediately produce this alteration, the means of preventing it, and the best method of combating its baneful effects where the prevention of it cannot be accomplished.

In the first part, on the termination by resolution, we find several cases, selected from the many which he met with in an immense hospital, of effusions into serous cavities, and into cellular tissue. The visible marks of the first were found in some of these instances a very considerable time, in one more than twenty years, after the accident which produced it.

In the cases of effusion into cellular tissue in different parts, we have some striking instances of the diffusion or dispersion as it were of the blood from its primary situation, and its appearance in parts, unhurt and remote from the injured spot, a considerable time after the accident. The varying discoloration of the skin for some way round a bruise, caused by the gradual diffusion of the more fluid parts of the extravasated blood, and the chemical changes it undergoes, is familiarly known, and is justly considered as a favourable sign. But some of our readers may not, perhaps, be aware of the great extent to which this diffusion occasionally reaches: in some cases to parts as distant as possible from the injured region, especially if they abound in cellular tissues, and are from any cause in a more depending situation.

If the blood is not absorbed after some weeks, and the surrounding parts are in a quiet state, and the fluctuation distinct and circumscribed, he has in some cases opened the tumour, pressed out its contents, and by regular compression has speedily effected an obliteration of the cavity. In severer cases the parts are too much bruised to recover their healthy action, and they slough, or they become inflamed; pus is secreted and mixed with the effused blood, which is speedily decomposed. The consequences are sloughing, and ill-conditioned abscesses.

Where matter is collecting the author promptly lays open the tumour; in some of the cases related, with good success; in others no benefit is derived from it; on the contrary the large openings appear to have brought on very dangerous symptoms, and to have hastened, if not caused, the death of the patient. Fatal consequences were found also to occur after opening the tumour not only in the cases in which from the violence of the injury the parts were essentially damaged, or inflamed, but in those also where the collection was blood alone, and the parts comparatively indolent and quiet. The author attributes all the bad symptoms in the latter cases to the opening being large, and the contents not being all carefully pressed out. He insists with much earnestness on the necessity of attending exactly to the last circumstance, and of afterwards keeping the sides of the cavity in contact by constant gentle pressure. He appears to have a great dread, and we think a most reasonable one of exposing, and only partially evacuating a large cavity in such cases. Attributing all the disorder which follows to the decomposition and absorption of the remaining blood, he would rather expose the whole cavity by a free incision, wash out every particle of blood, and fill it with lint, than give room for such an occurrence by partial evacuation from a smaller opening, if the latter were not instantly closed. Openings made to let out collections of blood immediately after its effusion, are often attended with the best success. If made at a more distant period, the sides of the cavity often inflame, and much disturbance follows. Where inflammation is induced by the original injury, or by any other cause, and an effusion of pus takes place, we have to deal with an abscess which usually breaks quickly, and which seldom therefore requires to be opened, unless the fluid be confined by fasciæ.

In the latter part of this memoir the author enters into a disquisition on the nature and composition of the blood, with a view to explain some of the phenomena observable in the progress of effusions of blood toward absorption, or the formation of putrid abscesses. In the same spirit he examines the chemical action of different substances on the blood in the hope of ascertaining the most active and effectual means of arresting the progress, and preventing the fatal effects of such abscesses whether opened spontaneously, or by the hands of the surgeon.

The memoir on hæmorrhages is styled by the author an elementary one. It is neatly written, and consists of sound and well delivered precepts illustrated by cases in the different methods of arresting bleedings of whatever kind. Perhaps there is no part of surgery in which an able surgeon is at once better distinguished from a bad one, than in the treatment of hæmorrhage. The one does nothing, or nothing to the purpose; in the foolish hope that each bleeding will be the last that will occur; the other follows the danger to its source, and is not satisfied till he can command the flow of blood by efficient means. In cases where a ligature is inapplicable from the nature of the hæmorrhage, or the situation of the vessel, the author applies compression, and he here relates cases of its efficacy in important bleedings under various circumstances. It should be applied if possible immediately on the bleeding point. He remarks with great truth that pressure carelessly applied, far from checking hæmorrhage, is often a cause of its continuance, and insists particularly on the necessity of exactness and method in our proceedings. We shall all agree also with our author, that the presence of coagula between the vessel and the compress is a complete impediment to the due action of the latter. This not unfrequently happens when the wound in the integuments is small, and it is a maxim not to be forgotten, that until the coagula are removed by a free incision of the integuments, we cannot for one instant depend on compression however accurately applied.

M. Pelletan has employed the actual cautery with great success, and he prefers it to the potential cautery, or styptics, in obstinate bleedings, where no vessel can be tied, where compression cannot be accurately applied, or is found to be of no avail, and where, at the same time, from the minuteness of the bleeding vessels, there is no fear of fresh hæmorrhage on the detachment of the slough.

Amongst the cases of death from the bleeding of small vessels, is one of an infant who died from the bleeding produced by leeches applied to the chest. That such accidents occasionally occur we have no doubt. The profuseness of the bleeding in infants, and the means generally advised and employed to encourage it without reference to this fact, often occasion so copious a loss of blood as imminently to endanger the life of the child, or to reduce it to a state of debility from which it does not immediately revive.

The last memoir in the second volume is on physiology. In it the author wishes to prove that the laws of general physics are applicable to every part of the system of the animal economy, and that in no other instance are they so evidently, and unequivocally demonstrable. In this attempt to revive in some degree what may be called mechanical physiology, he ridicules the doctrine of attributing all the phenomena of a living body solely to the influence of a vital principle, or to any peculiar properties inherent in living matter. We are far from considering the prevailing opinions in physiology as perfect; they are ingenious, but they are many of them conjectural, and in some points extremely defective. Still they proceed from more enlightened views, and are more correct, we must think, than a doctrine which considers the process of animal exhalation to be nothing but physical evaporation; which explains absorption by the laws of attraction in capillary tubes; and the circulation by the compressibility of fluids and the elasticity of arteries. We mean not to say that an animal body is exempt from the action of physical causes. We believe that they operate generally, and extensively in the animal economy; and that we shall widely err if we omit the consideration of them in our endeavours to explain the varied phenomena of animal, or organic life. All our observations go to prove the nicest mechanical structure and adjustment of parts for the different purposes they are designed to execute. But to suppose that the body is merely a machine, and that when put and maintained in action by an imaginary principle of life, the functions are all executed mechanically, and according to physical laws exclusively, is at least quite as absurd as to attribute every thing to the individual properties and energies of living matter, to the exclusion of external agents, and of those general principles which are known to operate universally, though their action is modified according to the qualities of the bodies on which they act.

The third volume contains two memoirs on hernia, with others on the subjects of diseases of the heart, of effusions into the chest, and of amputation.

The memoirs on hernia consist almost wholly of cases, with a few remarks on each. To follow the author through these would be inconsistent with the brief notice which a review permits. Nor is it an easy matter to present the author's opinion on any given point relative to this disease. Perhaps there is no subject in surgery on which so much has lately been written, or so well written. as on hernia. It may be thought by a few that enough has been said to exhaust the topic, and that any surgeon possessed of the information which our recent publications afford, will not feel himself at a loss how to act under whatever combination of untoward circumstances the complaint may show itself. Yet from a faithful record of extensive personal experience there is alway something to be gleaned, were it only a knowledge of the variety of forms in which a disease has actually occurred, and of the unforeseen accidents which have practically called forth the skill and knowledge of able men.

M. Pelletan is apparently unacquainted with the nicer distinctions of English surgeons with regard to the anatomy of hernia; or at least he nowhere notices them. We have not one direction as to the best mode of operating, but very many as to the best season. No remarks on the situation of vessels which may be endangered by the knife, but numerous observations on the difficulties the surgeon may have to encounter in complicated cases, and on the readiest means of overcoming them.

The first memoir is divided into two sections. In the first M. P. describes varieties in the external appearance of hernia, with respect to form, volume, and situation. Amongst the more remarkable cases are some of ventral hernia, caused by pregnancy. In one of these nearly the whole of the great and small intestines, with a portion of the stomach, were found in the hernial sac. The author introduces also in this place some cases of loose fatty tumours, in form and situation strongly resembling hernia. As such cases are not generally known; and have been rarely noticed by others, we shall follow the author through his account of them.

In a male subject brought into the dissecting room many years since, he observed two swellings corresponding to the openings of the abdominal rings. They were rounded in form, extending on each side into the scrotum. Their softness and the inequalities of their surfaces made him look on them as omental ruptures. The facility with which he was able to reduce them confirmed him in this opinion. On dissection he at first observed a membranous sac, slightly adhering to the cellular tissue of the scrotum and neighbouring parts. On opening this he found a mass of irregular form, with many processes also loaded with fat, resembling the appendices epiploicæ of the colon. The whole was included in a smooth polished membrane like peritoneum. It was easily pushed up and brought down again through the ring, the sac following the tumour. On examination from the abdomen, he was surprised to find the omentum at a distance from the ring, and in no respect concerned in the formation of the swelling, which was found to proceed from a part between the peritoneum and the posterior surface of the bladder. From this place a mass of cellular tissue loaded with fat, was continued in the direction of the abdominal canal through which it passed, drawing with it the peritoneum by which it was immediately covered; and pushing before it the peritoneum occupying the internal opening of the ring. In this way a perfect sac of peritoneum was produced, corresponding to the fatty mass which projected into it, as the testis projects into the tunica vaginalis. It communicated freely with the abdominal cavity, so that both intestine and omentum might have passed into it, though this does not appear to have happened in this instance. The formation of this species of herniary tumour, if the term may be used, may be compared to what takes place in the descent of the testes. The author describes some other varieties of this tumour in different situations, all of which most probably in the living subject would be mistaken for omental hernia. They occurred most frequently in fat subjects.

The second section contains cases of strangulated hernia in which the operation was performed with success. The author's object is to point out the circumstances on which this fortunate issue may be thought more immediately to depend. The cases present a considerable variety of treatment arising from the different symptoms, and peculiar circumstances of each. But, though they offer much that is important, we do not find any thing that is new in practice. It is well known that the indications after the reduction differ widely in various cases, and that we have often to combat the disease consecutive to strangulation, after the total relief of the strangulated part. The propriety also of operating early, and of pursuing a strenuous depleting and antiphlogistic treatment after the operation in the acute form of hernia are points well established in surgery. Some of the cases are complicated, but not so much as to be considered very uncommon, or requiring any extraordinary management.

M. Pelletan relates several cases of artificial anus, in consequence of mortification of the intestine; and one the consequence of a wound inflicted during the operation. In one of these the opening closed, in the others it remained during life. In a case after crural hernia, the patient continued doing well, with the external opening closing, whilst she was confined to a low and regular diet. After eating freely of improper food, an accumulation took place above the opening, and brought on very dangerous symptoms. The opening was enlarged by the knife, and the symptoms were speedily removed. The same accident occurred from the same cause a second time. The patient refused to submit to any operation, and died. It appeared on dissection, that the adhesion between the intestine and the opening had given way, and that the contents of the bowels were poured into the abdomen. From this and from other cases he takes occasion to argue against the practice of attempting to cure an artificial anus by compression. If the passage from the upper to the lower part of the gut opposite the opening is so far continuous and free as to allow of the fæces being partly evacuated by the anus while the patient observes a temperate diet, the opening may generally be brought to close by continuing the same abstemious diet, by rest, and by the frequent use of glysters. Compression in this case is injurious, as it prevents the partial evacuation by the wound before the tube is sufficiently dilated to allow of a free passage downwards. As the natural course becomes less obstructed, the external opening will contract without assistance. If no fæces pass by the anus, while the patient is confined to a moderate and liquid diet, the author thinks any attempt to close the opening dangerous; he advises a more generous diet, and takes care to preserve the freedom of the unnatural opening.

In the second memoir on hernia, our author takes into consideration the general causes, as well as the accidents and complications in the disease which render the operation of no avail, either because they are not rightly understood at the time of the operation, or because they are in their nature so vitally dangerous as to place the case beyond the assistance of art. Although M. Pelletan is evidently a vain man, he is always open and honest in his relation of cases, and exposes his own errors without any reservation, if he thinks he can thereby improve the science. The cases he here gives derive an additional value from the cause of death being always authenticated, and made evident by dissections. Our limits however, will not allow us to make any selection which would be satisfactory, although we are sure that an attentive perusal of these cases cannot fail to impress some important lessons on the minds of many of our readers.

The memoir is divided into three sections. In the first are arranged the cases which terminated fatally from the nature of the stricture. In some of these the hernia could not be reduced; in others when reduced it was still tied by an internal stricture. In one instance the author in returning the intestine after dividing the stricture, committed the mistake of pushing the former between the peritoneum and the muscles. The symptoms of strangulation continued, and the patient died. This accident we have seen occur in one of our own hospitals, and in the hands of a very good operator. The bistoury was passed between the sac and the edge of the tendon in dividing the stricture; and the intestine instead of receding as it should do into the abdomen, was pushed by the finger into the artificial recess prepared for it by the knife, so as to remain completely strangulated.

The second section contains cases which terminated fatally from the intenseness of the inflammation, or from the delay of the operation, the progress of the symptoms not being at all arrested by the relief of the stricture.

The third section contains cases of crural hernia. M. Pelletan considers these in general as less rapidly dangerous than inguinal ruptures. He says "the inflammation which in inguinal ruptures spreads so quickly, is slower and more uniform in its progress in crural hernia; and it is more from a conviction of the final necessity of operating for the relief of the stricture, than from the urgency of the inflammatory symptoms that the surgeon decides on operating." His cases however, do not all bear him out in this opinion, which differs completely from that expressed by the best writers on the subject in this country.

The memoir on some of the diseases of the heart does not offer much that is new. It contains some cases of acute and chronic inflammation of that organ: some of effusion into the pericardium not distinguished during life; and others in which the existence of a fluid in that cavity was regarded as certain, yet no more than the usual small quantity was found after death. He relates two instances in which the valves at the opening of communication, between the left auricle and ventricle were found much diseased, and the opening very considerably narrowed. He considers this case as rare, and not hitherto described.

In the subject of one of the cases in this memoir, an ulcer was found in the right ventricle, which had nearly penetrated through its substance. The patient had been ill for some months with inflammatory symptoms about the chest at the commencement of the disorder, and fixed pain in the region of the heart towards its termination. The author relates also a case of degeneration of the muscular structure and powers of the heart, and another of passive enlargement of its cavities.

In the memoir on effusions of fluid into the chest, and the propriety of withdrawing them by an operation, M. Pelletan gives many pertinent and original observations, which are the more valuable as these disorders are obscure, are frequent in their occurrence, and highly dangerous in their nature. In different sections he discusses the management of effusions of blood, of pus, and of serous fluid. In the first he thinks an operation scarcely ever adviseable, unless there be symptoms of a decomposition of blood with purulent effusion; unless, in short, the case becomes analogous to one of a simple collection of pus. In this second kind he distinguishes the symptoms of collections formed in the cellular tissue without the pleura, from those within its cavity. Abscesses between the pleura and the bones surrounding it, both in an acute and chronic form, are by no means uncommon. They should be opened early. In a sound habit, and not attended with caries, they heal spontaneously without any particular management. In the contrary case they are at best tedious, and frequently fatal. The author relates some instances of very large collections in the anterior, or posterior mediastinum, accompanied by caries of the sternum, or dorsal vertebræ, which terminated fatally soon after they were opened. He much deprecates the practice of opening such abscesses, especially those produced by a disease of the vertebræ, as he has invariably found that the death of the patient was, at least, hastened by the operation. His practice is the same, being founded on the same principles, as that adopted by Mr. Abernethy in the case of lumbar or psoas abscess.

Pus in the cavity of the pleura, may be secreted by the diseased surface of that membrane, or may proceed from an abscess in the lungs, or in the cellular tissue surrounding the pleura. The symptoms of such effusions are sometimes illusory, and the knowledge of this circumstance should put us on our guard. Our author strongly advises that the matter should be withdrawn by puncture. If the collection be circumscribed, and there be any external appearance indicative of this, the opening should be made at that point; but if there is not a projection he makes the opening between the second and third false ribs. He does not allow all the matter to flow out at the time of puncture, but introduces a small strip of lint into the opening, so as to permit it to ooze gradually away, covering the whole with compresses, and a moderately tight bandage.

In dropsy of the chest he does not expect much advantage from evacuating the water, unless at the same time the cause of the effusion could be removed. If any operation is performed, he advises that it should be done in the manner recommended above.

In the memoir on amputation, the author touches on the cause which requires this operation, and describes briefly the different modes of performing it. He prefers, with some little variation, that described by M. Louis in a masterly memoir on this subject in the Memoirs of the Academy of Surgery. But we were utterly surprised to find him averse to one of the most capital improvements in modern surgery, the attempt to make the cut surfaces unite by adhesion in the first instance. We had thought the practice to have been universally adopted, as one founded on the soundest principles, and confirmed by every day's experience. M. Pelletan prefers dressing the stump with lint, which he applies to the cut surface, making no attempt to bring the skin over the wound until the whole is covered by granulations. He says, that by a practical comparison of this mode with the one generally followed, he is well satisfied of its superiority. He gives many reasons for his preference. The principal are, that the skin can seldom be placed or kept in accurate apposition with the uneven surface of the muscles: that in almost every case some blood oozes from so large a surface, and is collected in the interspace, becoming the cause of further effusion: that frequently the bleeding is such as to require an exposure of the stump; and that where it does not proceed to this length, it becomes decomposed, and gives rise to ill-conditioned suppuration with serous discharge, preventing all union by adhesive inflammation, and producing a caries of the bone. So that after no little risk, and much constitutional irritation, the patient is really in a worse situation than he would have been if the stump had been left open at first, and no approximation of the cut surfaces had been made until the suppuration of the wound was declining.

We cannot but think that the author has magnified the accidents which prevent the immediate closure of the stump, and described as occurring generally, that which happens but very rarely under the hands of a careful surgeon. We have certainly often witnessed cases in which it has been necessary to remove the dressing on account of considerable bleeding; and others in which a deposit of extravasated blood between the muscles and the skin, has caused all the evils he points out. We think these accidents have occurred more particularly in hospitals, in which for the instruction of the students it is the custom to dress the stump immediately on the operating table. This is often done while the patient is yet faint, and cold. The removing him afterwards causes some disturbance; and as the warmth returns in bed, and the force of the circulation is restored, effusion often takes place to a considerable degree. The best practice is not to dress the stump until the patient has been some time in bed, and is recovered from the shock. If the wound is then carefully cleaned, and the cut surfaces accurately brought together, and kept so by gentle compression, hæmorrhage will scarcely ever occur, nor will more be effused than the lymph necessary for the adhesion and union of parts. So little risk is there, indeed, of serious bleeding, and such is the quickness and ease of the cure in most cases, that we cannot for a moment hesitate to prefer the means which effect it, to the painful, and unnecessarily lengthened course pursued by our author.

We close this analysis, if not with feelings of admiration for eminent talents, certainly with those of respect for considerable zeal for the improvement of surgery. M. Pelletan's contributions to the stock are numerous, and many of them of a value sufficient to make us sincerely hope that he will fulfil his promise of adding to them.

Practical Observations on various novel Modes of Operating on Cataract, and of forming an Artificial Pupil. By ROBERT MUTER, Holbeach, Member of the Royal College of Surgeons in London. 8vo. Wisbeach printed. 1811. pp. 115.

[From the Medical and Physical Journal, for April, 1812.]

THIS is a treatise upon a subject, it must be allowed, of importance, but which has received so much elucidation as hardly to admit any novelty beyond that of method in treating the subject. But even this may be of great value. The terseness, perspicuity, and elegance, of one writer, may render clear, pleasing, and intelligible, what the confusion and dullness of another involves in darkness and obscurity.

The object of Mr. Muter is laudable. He intends "to produce an uniform mode of operating in cataract, and in forming an artificial pupil, to give as little disturbance as possible to the structure and natural situation of the parts of the eye:" and he aims at perspicuity by dividing his little book into thirteen sections.

The first of these treats on the opake crystalline lens, its colour, various consistence, and symptoms. The crystalline has been observed to become opake first in its centre. Sometimes the opacity spreads rapidly, at others it is imperceptibly diffused: the diseased lens sometimes adheres to its capsule, and blood-vessels have been seen shooting upon it through that membrane. The colour of the opake lens is sometimes dark, at others pearly white. The most early and the most certain symptom of cataract, independent of the detectable opacity of the lens, is a settled mist, covering and confusing objects.

The second section is an enumeration of instruments; the third treats on "the mode of laying open the capsule of the lens, through a puncture in the cornea." The object of this operation is to admit the aqueous humour to act freely on the opake crystalline. The steps of the operation are thus described.

"The patient is to be seated in a low chair, before a light not too bright and active; the eye not to be operated on, covered by a compress retained by a bandage. The patient's head is then to be placed obliquely to a window, so that the eye to be operated on may be inclined towards the outer angle of the orbit. The operator, being conveniently seated, is to place the fore and middle fingers of the left hand upon the tunica conjunctiva, just below, and a little on the outside of, the cornea. At the same time the assistant, who supports the head, is to apply one, or, if the eye projects sufficiently, two of his fingers upon the conjunctiva a little on the inside and above the cornea. The fingers of the operator and assistant thus opposed to each other, will fix the eye and prevent the lids from closing. The eye being thus fixed, the point of the needle is to pierce the cornea in the line of its transverse diameter, immediately anterior to its connexion with the sclerotica. It is then to be guided slowly forward, with its flat side parallel to the iris, until opposite the pupil. The point, being then turned backward, punctures the capsule of the lens near the border of the pupil on the same side it entered; and, passing a little way behind the capsule, not so far as to endanger the opposite side of the pupil being cut, its cutting edge is turned upward toward the capsule, and its point elevated. The cutting edge of the needle will divide that portion of the capsule between the point of the needle and where it first entered. Should it be thought proper to attempt to break down the lens, it would be more safe to withdraw this needle, and introduce one having a small curvature towards its point, and without a cutting edge."

The direct object of this operation, as just observed, is to admit the solvent properties of the aqueous humour to act upon the diseased crystalline, through an opening in its investing membrane, made in the manner above described. Professor Scarpa and Mr. Hey fully justify this operation, which with them has been generally successful. Sometimes the whole, at other times, if the crystalline has been broken down by the proper instrument, portions of that lens escape into the anterior chamber of the eye, but are soon dissolved and quickly absorbed. For some precautionary circumstances, and remedying infortúnia as they may occur, we must refer to the work.

The extraction of a soft cataract, through a puncture or small incision of the cornea, is the subject of the fourth section.

The operation described in the preceding section, is considered, under particular circumstances, as preparatory to this of extraction. We have not room to transcribe Mr. Muter's description of the operation, but we must notice a point as we conceive of practical importance. It is that of preventing the escape, and leaving undisturbed the vitreous humour. This desirable object is effected by guarded and moderate pressure on the globe of the eye; and by carefully opening the anterior portion of the capsule of the lens only, leaving the posterior part in its natural state.

Section five, is occupied by a "new mode of puncturing the capsule of the lens, and fixing the eye in the operation of extraction." The particular objects of this section are to show the advantages arising from puncturing the capsule of the crystalline, and admitting the aqueous humour to act, by its solvent powers, on the lens, sometime previous to extraction. By this, some difficulties are avoided in the operation, which occur when the section of the cornea is made previously to opening the capsule; and when the cataract is pulpy it may be dissolved and absorbed, rendering extraction unnecessary: and even a hard cataract may be diminished in size by a solution of some lamella of the lens. We see no other objection to this than what may arise from the patient's feelings. If he has been taught to believe that the whole will be performed at once, his disappointment will be great when he finds his eye is to be cut into again at another period. If the advantages gained are decided, this will not be a valid objection. The other part of the section describes an instrument by which the capsule may be punctured, the eye fixed without pressure on the ball, and the incision of the cornea made at the same time, with the method of using it. If, however, the author establishes his point, that the puncture in the capsule should be made some time previous to the incision of the cornea, we do not see why he should tax his ingenuity with the invention of an instrument that is to make the "puncture and incision of the cornea at the same time."

The sixth section describes "a new mode of extracting the cataract through an incision in the sclerotica."

"A puncture is to be made, by a couching needle, in the *sclerotica*, at the distance of little more than a line from its union with the cornea. Through this puncture a small hook is to be introduced, which is to be directed behind the capsule; so much only of it is to be introduced that its point, when brought forward, will reach the centre of the crystalline. If the length of the hook from its handle be little more than the diameter of the eye, the operation may be performed with great facility, being now very similar to couching. If, in bringing forward the point of the hook, the cataract is perceived to be pushed forward, and the pupil dilated, the operator will discover that it is of a firm consistence. When the hook has got sufficient hold of the cataract, that it may be removed from the axis of vision, the hook is to be withdrawn until resisted by the coats of the eye. The operator holding it, with the cataract affixed to its point, in the left hand, the patient's eye being turned inwards towards his nose, makes an incision with his right by a common scalpel through the sclerotica. The incision is to be begun at the puncture, and carried onwards, in a straight line, towards the external canthus. It should not be made directly into the eye, but in a slanting direction, through the coats. When the incision is of sufficient extent to permit the extraction of the cataract, it is to be withdrawn on the point of the hook. The lips of the wound should be neatly adjusted, and the eyelids closed."

The objection to this method is the formidable inflammation that will, probably, occur in the sclerotica. We are informed that our author is making experiments on inferior animals with a view to ascertain the degree of inflammation that may be expected to follow an incision in the sclerotica.

The extraction of the opake lens, when adhering to the iris, is treated of in the seventh section. It frequently happens, that, after severe inflammation, not only the capsule but also the crystalline itself adheres to the iris. In such cases, though the incision of the cornea has been made of sufficient extent, and the capsule punctured, the lens does not escape from the eye. Nor will it be protruded through the pupil into the anterior chamber, even on the application of such pressure as might endanger the rupturing of the posterior portion of the capsule and membrane of the vitreous humour, or separation of the iris from the ciliary process. Our author recommends the removal of the adhesions by repeated attempts, rather than using much force at once. But we must refer to the section itself for a fuller explanation of his views.

A diseased condition of the vitreous humour is an impediment to the successful termination of operations for cataract. The infortunia attendant on this circumstance are the sudden sinking of the lens into the vitreous humour in attempts to lacerate its capsule; and, when a section of the cornea is made, the escape of that humour with the lens. The eighth section treats on this subject, and endeavours to guard against the above accidents.

The ninth section, which closes the first part of these "Observations," explains "the different modes of operating, by which the several kinds of membranous cataracts may be removed from the axis of vision, or extracted through a puncture in the cornea."

Three species or varieties of cataract are noticed in this section:—1st, The capsular, in which the opacity exists in the capsule of the crystalline. 2d, The lymphatic, formed by the coalescing of fragments, which remain after an operation. 3d, The reticulated, frequently a new production of a delicate fabric, resembling a spider's web.

The capsular cataract, or, as it is often denominated, with a reprehensible want of precision, the membranous, throughout the section, is described in many of its varieties, and the modes of operating laid down. The second and third species are barely noticed. We cite the following passage on account of its describing an ingenious, though perhaps too complicated, instrument.

"Sometimes, in secondary cataract, the vision is diminished by opake fragments of the capsule, of a triangular shape, attached by their basis to the margin of the perforated capsule, and stretching their apices towards the centre of the pupil. When these fragments are small, and the vision but little diminished, as considerable difficulty and danger of injuring the iris may attend any attempt to remove them, they should be suffered to remain. From the retraction of their apex, and being acted on by the aqueous humour, they generally in time become less. Whereas, when they are large, and, instead of being diminished, increase in size, they should be extracted as soon as this is perceived. These fragments may commonly be removed by puncturing their base with a small hook, and then gently turning it in different directions. But in some cases where the capsule adhered to the iris, they have been found to become thick and bulky, and forming a tough knob. In such cases they occasionally were not to be removed, even by the iris scissars. Did this occur so frequently as to merit attention, these knobs might be removed by an instrument resembling a flat canula, armed with a very fine silver or gold wire, and inclosing a little bistoury, having a cutting edge towards the end of the canula. This instrument being introduced through a puncture in the cornea, the wire is to be passed beyond the knob, and then drawn tight, so as to bind it to the end of the canula; the operator then slides the edge of the little bistoury beyond the end of the canula, and separates the knob from the capsule."

Connected with diseased crystalline, or consequent to an operation for removing that lens when opake, and resulting from an inflamed eye, is an altered and deranged state of the iris, contracting and often closing the pupil. In this state of the iris, the operator sometimes succeeds in restoring vision by forming what has been technically termed an *artificial pupil.* It is the business of the remaining sections of this volume to point out the varieties of this altered structure of the iris, and to show how they may be removed by art.

Two general classes of causes give rise to defects of sight, which require the formation of an artificial pupil. One of these is confined to the iris, the other to the cornea. If the iris is completely closed by obliteration of the pupil, vision is lost; if it is contracted and partially closed, vision is diminished. If the cornea becomes impervious to the rays of light in the part opposite to the pupil, vision is impeded, diminished, or lost. In the tenth section, treating "on different deranged states of the eye which may be relieved by an artificial pupil," the species or varieties of morbid alterations, arising from these causes, are explained.

"When the rays of light are prevented from falling on the retina, by the contraction or closure of the pupil, if the transparency of the cornea remain uninjured, a portion of the iris may be removed, and vision in a great measure restored. Total opacity of the cornea has hitherto been, and probably will for ever remain, irremediable; but, in those cases where a considerable part of it remains transparent, some degree of vision may be restored by the removal of a portion of the iris, opposite that part of the cornea which retains its transparency."

On this principle the eleventh section proceeds to point out "the different modes of forming an artificial pupil."

Of all the operations performed upon the eye, those which are employed to remedy deranged and altered states of the iris, are the most difficult. The delicacy of structure, the mobility and the situation of the iris, concur to render precision and manual dexterity, in a superior degree, requisite in the operation. It is true, we believe, that our countryman Cheselden first ventured on this operation. Since that time a multitude of oculists have undertaken it, with shades of difference in their methods. Those particularly noticed by our author, are Janin, Maunoir, de Wenzel, Scarpa, and Gibson; to the latter of whom he gives the preference. The work of Mr. Gibson, on which this superiority is founded, was reviewed in one of our former numbers for the year 1811.

There are two conditions of the eye upon which this operation is founded. They respect the locality of the artificial opening: in one the opening is made in the natural situation, the centre; in the other, toward the margin, of the iris. The remaining sections 12 and 13, are appropriated to an explanation of these. For the detail we must refer our readers to the work.

Of the general merit of these "Observations," we must, every disadvantage considered, speak favourably. As issuing from the press of a small provincial town, we admit them to be indicatory of that spirit of literature which is pervading the most remote corners of the empire: and, though we cannot object to the investigation of any part or branch of the art, we are of opinion that by a close and critical examination of local circumstances, as they tend to preserve health or produce disease, as they modify morbid changes, or explain the operations of nature, more would be gained to science, than by labouring on subjects which require a greater space for observation than country practice presents.

On the Embalming of dead Bodies. By MATTHEW BAILLIE, M. D. F. R. S. Fellow of the College of Physicians of London, and Honorary Fellow of the College of Physicians of Edinburgh.

[From the New Medical and Physical Journal, for September, 1812.]

THE object of this paper is to describe a method of embalming dead bodies, which shall effectually preserve them from decay. The process here recommended is the result of some experiments made upon children, either still born or who died soon after birth; but the same method of embalming, we are told, will be effectual, whatever may be the size of the body. Dr. Hunter's method of embalming, although effectual in preserving the body from decay, was extremely tedious, occupying many hours, and was attended with much unnecessary difficulty. The viscera were cut out, their vessels were tied up, and they were a second time injected; the same operation was also repeated in the remaining vessels of the body. These inconveniencies are all obviated by the following improved method of Dr. Baillie.

"An injecting pipe was put into the umbilical vein, and the blood vessels of the whole body were well filled with the antiseptic fluid formerly mentioned, consisting of essential oil of turpentine, with a small portion of Venice turpentine dissolved in it, and well charged with vermilion. Had the children been older, or had the experiment been made upon a full grown body, the injecting pipe would have been put into one of the inguinal arteries, and all the vessels of the body would have been injected from it. This will form the only difference between the method of embalming a child newly born, and that of embalming a person of any age, after the umbilical vein is obliterated. It ought to be remarked, however, that when the vessels of the body, generally, have been injected from one of the inguinal arteries, a ligature should be immediately made upon this artery above the pipe, and that the pipe should afterwards be taken out, and put again into the same aperture of the artery, but directed towards the foot. The vessels of this limb should then be filled with the antiseptic fluid, a ligature should be made upon the artery under the pipe, and the pipe should be taken out. In this way the injection of the vessels of the body will be complete.

"When the body is of such a size, as to be capable of being readily put into a tub of warm water, for an hour previous to the injection of its vessels, there will be an advantage in doing it; because the antiseptic fluid will penetrate into the minuter vessels of the skin, and give it a more florid colour. This, however, is not at all necessary for the preservation of the body. After the body has been injected, it should remain at rest for an hour or two, that the fluid may have time to settle. The thorax and abdomen should then be laid open, exactly in the same manner as they are, when a body is examined for the purpose of discovering any morbid appearances in these two cavities.

"An opening should next be made into the duodenum, about two or three inches distant from the pylorus, and a large injecting pipe inserted into it, with its direction towards the stomach. Water should be thrown through this pipe by a syringe, so as to wash clean the stomach, the œsophagus, the pharynx, the mouth, and the nostrils. The pipe should then be taken out, inserted into the same opening in the duodenum, but directed towards the intestines. Water should then be thrown in, to clean the small and great intestines.

" When this has been done, a ligature should be made upon the œsophagus at its upper extremity, and another ligature should be made upon the rectum, as low down in the pelvis as the reflexion of the peritonæum will allow. Camphorated spirits of wine should then be thrown in, by a pipe inserted into the opening in the duodenum, so as to distend moderately the small and the great intestines, the stomach, and the œsophagus. The pipe should now be withdrawn, and the opening in the duodenum closed by a strong ligature. A small opening should next be made in the trachea, almost immediately under the cricoid cartilage of the larynx; an injecting pipe should be put into it, and the air-cells of the lungs should be moderately filled with camphorated spirits of wine. The pipe should then be withdrawn.

" A ligature should next be made round the aorta, close to its origin, and the cavities of the heart should be laid open, for the reception of an antiseptic powder, the composition of which shall afterwards be described.

" The urinary bladder should then be squeezed, so as to be completely emptied, and should be laid open at its fundus. When this has been done, the surface of all the viscera of the thorax and abdomen, together with their parietes, should be washed with camphorated spirits of wine. Then all the interstices of the different viscera of the thorax and abdomen should be filled with an antiseptic powder, consisting of camphor, white resin, and nitre, intimately mixed together. With this powder too, the cavities of the heart and the urinary bladder should be filled.* The proportion of these different ingredients to each other is not of much importance, as in the three children which I embalmed, it was different in each. Two parts of camphor, one of resin, and one of nitre, will probably be as good a proportion as any other. Some essential oil of rosemary, or lavender, or both, may then be sprinkled upon the surface of the powder. The oil will give an agreeable odour, but is not necessary for the preservation of the body. The body should then be very closely sewn up.

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* In two of the children, I opened the head at the anterior fontanel, took out a portion of the brain, and filled the cavity with the antiseptic powder. In the third child, I made no opening into the head at all, yet the head is perfectly preserved from decay. This operation is therefore unnecessary.

"The mouth, the nostrils, the passages of the external ears, the rectum, and the vagina, (if a female is embalmed) should be filled with the antiseptic powder already described. The humours of the eyes should next be let out, and the space between the eyes and the eyelids should be filled with the antiseptic powder; after which the two eye-lids should be brought into close contact with each other. The body should then be rubbed over with some aromatic oil, as oil of rosemary or lavender. All the limbs and other parts are then to be put into the posture, in which they are to remain, upon a bed of Paris plaister, or any other absorbing substance."

Observations on the Nature and Cure of Dropsies. By JOHN BLACKALL, M. D. Physician to the Devon and Exeter Hospital, and to the Lunatic Asylum near Exeter. London. 1813. 8vo. pp. 428.

[From the (London) Quarterly Review, for July, 1813.]

THE endeavours of those who have sought to improve the practice of medicine by applying to it facts or principles discovered in any other branches of physical science, or even by the introduction of any subtile refinements of investigation into morbid physiology and pathology, have hitherto been attended by no very decided success. An attempt of this kind is made in the present work of Dr. Blackall; and in a form, which is at least sufficient to excite our attention, and to induce the medical world to submit to the test of further experience the observations which it contains: but the concurrent testimony of such experience, in the hands of various practitioners, is obviously required, before their universal truth and importance can be admitted as sufficiently demonstrated.

Dropsies have been attributed by some authors to the inactivity or obliteration of the orifices of the absorbents of the respective cavities alone; but there can be little or no doubt that, in all serious cases, the secretion of the exhalent arteries has also undergone a morbid change. With whatever other disturbances of the processes of life these diseased affections may be connected, we are totally ignorant of the general nature of such a connexion: frequently they seem to be preceded by a state of inflammation, which has sometimes been supposed to have obstructed the orifices of the absorbents by an effusion of lymph, while the exhalents have remained pervious; but frequently also there is no appearance of any affection of this kind, and sometimes mechanical pressure on the trunk, or larger branches of the absorbents, seems to afford a tolerable explanation of the occurrence of local oedema. In general dropsy, it was discovered by the ingenious and industrious chemist Mr. Cruickshank, that a portion of the serum of the blood, at least of its albuminous or coagulating part, was usually mixed with the secretion of the kidneys: and the distinction of the nature and treatment of dropsies, according to the presence or absence of this symptom, constitutes the principal subject of Dr. Blackall's work, which is deduced from a series of observations, continued for several years, on an extensive scale.

With respect to the pathological part of the investigation, our author's labours seem to have been in great measure anticipated by Dr. Wells, of whose papers, published in 1812, the Postscript contains an abstract. In the dropsy following scarlatina, Dr. Wells found much danger from inflammation of the pleura or peritoneum: in a large proportion of cases the kidneys secreted some red blood; in many more their secretion was turbid; and in all severe cases it was coagulable by heat. In dropsy not following scarlatina, the coagulation took place in a little more than half of the cases examined; sometimes by heat only, and sometimes by the addition of nitrous acid, a test which becomes necessary where the fluid is so much diluted as to contain less saline matter that in its natural state; for in this case the addition of any neutral salt is sufficient to render the albumen coagulable by heat as usual. Anasarca and hydrothorax most commonly exhibited the coagulum; ascites less frequently. It often happened that the whole fluid exposed to heat became solid; sometimes softish, but sometimes quite firm: an effect which took place when common serum was added to the same secretion in a healthy state, in the proportion of one to four. From this mode of estimation it was concluded, that in one case as much as seven ounces of serum was discharged every day. In healthy persons Dr. Wells could scarcely ever discover any traces of a similar deposition of albumen; in some chronic diseases, especially where mercury had been employed, it was more or less observable. Bark and steel were of no use where it appeared; nor were squills, digitalis, and crystals of tartar so beneficial as in other cases: the tincture of cantharides seemed, however, to be more successful. Mr. Brande found, in a case of this sort, a considerable quantity of albumen precipitated by sulphuric acid, and an almost total deficiency of urea.

The principal part of Dr. Blackall's book is filled with a minute relation of cases of dropsies of all kinds, with their treatment, and sometimes with the appearance on dissection. Besides the distinctions derived from the presence or absence of a coagulum, Dr. Blackall seems to think that a high colour, and a large portion of extractive matter, where the coagulum is wanting, denote a strength of constitution with internal obstruction, (p. 192) and require active diuretics and deobstruents; and that the opposite state of great dilution indicates a feeble and impoverished habit, and sometimes a constitution completely broken down. With respect to the treatment of dropsy where the coagulum is discoverable, his observations are more elaborate and original.—p. 277.

'Stahl remarks, that hæmorrhages are cured by moderate depletion, but by the use of astringents and tonics are converted into dropsies; and our practice will be rational in dropsy itself, in proportion as we keep the spirit of this observation in our view. The loss of the serous part of the blood, which so remarkably distinguishes it, presents to us a symptom of a very debilitating kind; and our first consideration of the subject might naturally enough encourage us to attempt its cure by those remedies, which, from their effects on occasions not apparently dissimilar, are called astringents. If, however, the doctrine of Stahl is ever true in an actual inflammatory hæmorrhage, it is certainly most strictly so with regard to this flux of serum. Whoever endeavours to restrain it by bark, steel, and similar remedies, will inevitably see reason to repent that attempt in an increased tension and fulness, a pulpy countenance, a cough, if there has been already none, and in worse cases a true peripneumony. The very symptom for which he has prescribed will likewise be aggravated. Experience more than enough has convinced me of the truth and importance of this observation. Not, indeed, that practitioners can be said generally to act in contradiction to it; for they have too much overlooked the appearance to which it relates, to have made its removal an object of their contemplation. But it is so common an error in practice to impute discharges to debility, and endeavour to check them by astringents, that it cannot be too much provided against.'

It appears, however, (pp. 80 and 188) that where the urinary coagulum is very loose, bark, and other tonics are beneficial.

The author proceeds to recommend very strongly that great attention be paid to the signs of inflammation, not only preferring febrifuge hydragogues, but frequently employing even venesection, especially where there are symptoms of pneumonia, after mercurial courses, and in inflammatory anasarca; the firmness, copiousness, and early appearance of the urinary coagulum, affording the best guide for the administration of this remedy. Purgatives in general have the advantage of obviating an inflammatory tendency; but in hydrothorax they are generally ineffectual. Half an ounce of the supertartrite of potass daily stands 'in the very first rank,' especially where there is much urinary sediment and coagulum; it is less appropriate where the kidneys are feeble and their secretion watery. Antimonials also seem to favour the operation of laxatives. Of diuretics, squills are the most likely to be serviceable in proportion as the coagulum is less marked, and there is less appearance of inflammation and of indigestion; they operate best in the fullest doses that can be borne, and the mixture of gum ammoniac with nitrous ether seems to afford a good vehicle for administering them (p. 66.) Cantharides, and other stimulating diuretics, our author thinks have a tendency to promote the appearance of coagulum. Tobacco seems to have some pretensions to notice; but digitalis is the most important of all diuretics where the urinary coagulum is present; in its absence, and where the fluid is 'pale and crude,' it seems to fail almost uniformly: (p. 297) in the hydrothorax, its powers are truly astonishing, but it ought not to be rashly mixed with other diuretics, nor with mercurial deobstruents.

Here, however, we must observe, that we have very lately been witnesses of the total failure of a full dose of digitalis in a case of hydrothorax, which was soon afterwards completely relieved by mercurials, carried to the extent of an incipient salivation, and combined with antimonial medicines. Against an over dose of digitalis, blisters on the stomach and opiates are recommended. Dr. Blackall entertains some doubts whether the tincture is equally diuretic with the infusion and the powder. He strongly insists on the efficacy of digitalis in subduing an inflammatory diathesis, and considers it as in many cases equivalent to venesection; nor is he disposed to admit the exceptions made by Withering, Maclean, and later authors, against its use, where inflammation is present. He is even inclined to believe that the blood may generally be in an inflammatory state in the dropsy of debilitated constitutions, and that digitalis may be beneficial in 'breaking down' its 'altered texture;' (p. 316) here however we fear he is venturing a little too far into groundless theory. In other states of the body, digitalis does not appear to be diuretic. (p. 317.) Broom, artichokes, and bohea tea, are cursorily mentioned; opium more favourably; and certainly the effect of this powerful medicine in diabetes would lead us to expect benefit from it in many dropsical cases. Tapping and scarifications have been observed to alter the nature of the urinary coagulum; but the relief derived from these operations is scarcely ever permanent. The diet, our author thinks, has usually been too cordial and stimulant: where there is hyperuresis, he forbids fruit, and recommends soda water; with respect to thirst, he observes that it is rarely not to be gratified. In a species which seems to have been the hydrops (anasarca) cacotrophicus, in the crew of an Indiaman, the use of well fermented bread appears to have produced an almost instant cure, as an active diuretic.

Among tonics, Dr. Blackall prefers bark in young persons of sound constitution, steel in a vitiated habit, with a sallow complexion. Mercury, as tending to produce the appearance of a coagulum, or even of blood, is forbidden where this appearance already exists; but where the bile passes off by the kidneys, or where their discharge is only scanty and high coloured, mercury may be the most effectual remedy. Two grains of calomel every night seem to have converted an anasarca after scarlatina into a hydrocephalus internus; while on the other hand digitalis with topical bleeding has completely succeeded in curing a hydrocephalus. Mustard cataplasms quickened with oil of turpentine are recommended to be applied to the feet in this disease; and we agree with our author in thinking this remedy frequently preferable to a common blister for the relief of local affections.

A concise and comprehensive account of almost all that has been observed concerning the angina pectoris forms an Appendix to the volume. In general Dr. Blackall coincides in opinion with Dr. Parry respecting this disease, though he remarks that in some cases the term syncope appears to be inapplicable. In the treatment, he observes that its connexion with gout or rheumatism ought to be kept in view: he recommends drains, especially issues in the thighs, or rather setons about the chest; opium in large doses, and the immersion of the arm affected in hot water, have been found very useful palliatives.

We cannot agree with Dr. Blackall when he says (p. 259) that the ancients, 'not without much propriety, termed the natural secretion an *exhalation*,' and, (p. 264.) 'that the fine material, which lubricates internal surfaces, is not liquid, but something more volatilised.' We are utterly ignorant of any 'experiments of Mr. Hunter,' which can be said to prove so paradoxical a proposition. It is firmly established, by the most accurate physical experiments, that no aqueous vapour can exist under the atmospherical pressure at a temperature lower than 212°; and there is no vital power which has hitherto been shown, or even suspected, to exist, that can supersede this law of inanimate nature, and communicate to a watery fluid the power of remaining permanently elastic at the ordinary temperature of the animal body. It is only in very elevated situations, where the barometer is always low, that even Lavoisier's reasoning, respecting the possible existence of ether as a vapour within the body, could be at all admissible. We also entertain doubts of the propriety of the expressions, that the '*blood* has been found *inflamed;*' (p. ii.) 'a severe and long continued *inflammation* of the *blood*, not connected with any *corresponding* affection of the internal parts.' (p. 117.) We strongly suspect that the improper use of the term 'inflammation' has insensibly led the author to the reasoning which follows; 'can we suppose it possible that such a disposition as this should be merely general? Or, is the cellular membrane in these instances' of dropsy, 'the seat of an obscure inflammatory process?' We see no difficulty in supposing the *possibility* that the disposition should be general, or that the blood may exhibit a buffy coat in dropsy as well as in inflammation; though we do not mean to insist on the probability of the fact.

Among the difficulties to be encountered by those who, like our author, are laudably employed in applying chemical tests to nosological distinctions, the complicated nature of the products to be examined, in a state of health, is one of the greatest. In illustration of this observation, we may adduce the analysis of the fluid which has been the principal subject of Dr. Blackall's investigations, from a paper of Professor Berzelius, published in the last volume of his Essays. Afh. III. 97.

Water	933.00
Urea	30.10
Sulphate of potass	3.71
Sulphate of soda	3.16
Muriate of soda	4.45
Phosphate of soda	2.94
Muriate of ammonia . . .	1.50
Superphosphate of ammonia .	1.65
Uncombined lactic acid, lactate of ammonia, peculiar animal extract and mucilage, and urea in triple combination	17.14
Neutral earthy phosphates .	1.00
Uric acid	1.00
Mucus of the bladder . . .	.32
Silica	.03
	1000.00

These proportions are however liable to considerable variation, without actual disease; in particular the uric acid may be entirely wanting, when the perspiration has been abundant. Some of the substances here enumerated would present but little difficulty in the operation of such chemical agents as might be employed for any purpose independent of them; while it would be highly necessary to attend to the presence of others, the complicated constitution and diversified form of which have hitherto rendered their nature and properties extremely obscure and uncertain.

ORIGINAL PAPER.

FOR THE ECLECTIC REPERTORY.

A curiously complicated case of Hernia, with the appearances on dissection. By Samuel Colhoun, M. D. Physician to the out-patients of the Pennsylvania Hospital.

M............. T............, aged forty-five years, was taken ill upon the 14th of March, 1814, with the following symptoms:

At about 10 o'clock, A. M. she was seized, when to all appearance in perfect health, with a violent bearing down pain, extending in the direction of the ureters, which continued, without intermission, for some hours: the pulse was a little slower than natural, and her bowels rather inclined to costiveness. They had been moved the day before. Her constitution was delicate, and her habits active.

The expulsive efforts of the muscles of the abdomen were constant. The period of the menses, which she expected upon this day, led to the suspicion that her symptoms were to be referred to that cause. The menses appeared two days after, and seemed to render it probable.

About three weeks before, she had applied for medical assistance, with a tumour in her groin, resembling in appearance a small slightly enlarged gland, firm, with a slight degree of pain. She complained at the same time of some pain on making water, with a discharge from the urethra, which was believed to be pus. She had been attacked frequently with symptoms of gravel, and had passed matter of a sabulous nature. She had frequent desire to evacuate her urine, discharging but little at a time. Her former tendency to nephritic disease, with the present symptoms, induced the belief that her complaint arose from that cause; and, very probably, that the disease of the groin was a sympathetic effect of the absorption of pus from the surface of the urethra. On this occasion, as it was removed by the infusion of the uva ursi, the decided effect of which upon the urinary system has been advocated by some able medical men, it was concluded that the disease was nephritis. She was purged freely with a saline medicine, which contributed much to her relief. A blister was applied to the tumour in the groin, which gradually declined, and in about eight days from the first attack, the symptoms of the disease of the bladder disappearing first, she was completely well. The issue of this attack excited attention to the bladder, to determine whether the present symptoms had not their origin in a disease of that viscus. The expectation of the monthly secretion of the uterus, with the absence of the usual symptoms of nephritic disease, induced the belief that the uterus was the diseased organ. Her bowels having been opened the day before, her system debilitated, the prevalence of typhus, and the existence of an extremely malignant case in her house at the time, induced me to pay but little attention to the usual depleting remedies, and to depend upon the use of anodynes to abate the pain of the most prominently apparent disease.

Laudanum and camphor were accordingly exhibited in liberal doses. At the end of twelve hours they had produced no effect. Warm fomentations were applied without relief. The next morning, on the 15th, a purge was administered, in divided doses, consisting of the tartrite of potash, given every two hours till it should produce an operation. It was rejected by the mouth. Injections of common salt, with water and molasses, were exhibited every half hour, with the effect at first of producing the evacuation, apparently of the lower bowels, but without any further operation. Great and distressing pain was felt in the region of the stomach. Irritating applications were made to it, but with no effect. The preparation of the purgative medicine was varied in such a manner as to render it agreeable to the stomach, until it was believed that a sufficient quantity had been retained. Injections of turpentine, with a mucilaginous vehicle, were used, unavailingly. The bowels appeared to be constipated beyond relief. The same means, however, during the night of the 16th, were continued. On inquiry next morning (17th) there was no evacuation. The abdomen was examined, and a tumour was discovered in the groin. It was found to be seated on the edge of Poupart's ligament, was hard and unyielding to the touch, and, on applying the hand on the lower side of the ligament, it was found to arise deeply from the muscles of the thigh, with a broad base, and apparently resembling an enlarged inguinal gland. The belly was swelled, and painful to the touch, principally in the region of the stomach.

The breadth, the base, and the hardness of the tumour prevented the exact knowledge of its origin. The advice of Dr. Hartshorne, one of the surgeons of the Pennsylvania Hospital, was requested. The tumour was examined, and upon the top of it there appeared a small elevation, which communicated the sensation of a vessel, containing a fluid, evidently moving from one part of it to another. The lower parts of the tumour were hard, and the part above alluded to formed so inconsiderable a portion of it, that the indication was extremely obscure. From the general character of the symptoms, it was suspected to be a hernia. The purging plan was continued with the utmost promptitude. Drastic injections were also exhibited till the morning of the 18th, when, from the appearances of the tumour, and the ineffectual use of the purgative plan, the assistance of another medical gentleman was called. Dr. Hewson attended. At this time the surface of the tumour had undergone some change. The swelling of the inguinal glands was distinctly perceived. The deep origin of the tumour from the muscles of the thigh by the side and below Poupart's ligament, still excited doubts concerning its nature. Stercoraceous vomiting came on in the night of the 19th. Injections of tartar emetic, in the quantity of five grains, every hour, in a gill of moderately warm water, were administered which greatly relieved the distress of the patient. No evacuation, however, was produced. On the night of the 20th, the vomiting ceased, and returned at intervals towards morning.

On the 21st our efforts were directed to nourish the patient by injections of broth, and the essence of beef extracted by heat. The vomiting, with acid and fetid eructations, alternated for two or three days. No change took place in the tumour.

On the 22d, her strength was greater, and she was improved in every way. Her bowels were unmoved, and the abdomen was very much swelled, but much less painful than it had been. The local disease had lost its effect upon the general system, and the patient was evidently better. It was concluded, that the use of the nutritive articles should be continued. On the afternoon of the 23d, rhubarb and the pure magnesia were prescribed with the intention of again attempting to move her bowels. By the next morning she had taken ℥iss of magnesia and ℈ii of rhubarb, with the effect of discharging per anum, about half an ounce of reddish coloured mucus. Believing that the cathartics had been tried sufficiently, they were omitted. Nutritive articles, in which there would be little residual matter after digestion, were given, and the case was left to nature. She lingered till the morning of the 28th, when she died.

On examination, the groin presented a slightly elevated tumour, which, on applying the fingers, yielded easily, had become soft, and lost all the characters which had distinguished it during life, the structure of the skin being almost entirely decomposed. On opening the abdomen, the ilium, near its termination, was discovered to be strangulated below the femoral arch, so as to include a very inconsiderable portion of the intestine, leaving a passage for the fæces of scarcely half an inch in diameter. Adhesions had formed between the gut and the peritoneum. The cavity of the intestine communicated with the cellular tissue of the groin, into which the intestine had discharged its contents, and excited violent inflammation and mortification. It extended along the upper and inner surface of the thigh, which was filled with fæcal matter and dead cellular membrane. The structure of the parts concerned in the formation of the tumour, was completely decomposed, so that no idea could be formed of their nature.

The portion of strictured intestine was so small as to preclude the possibility of its protrusion below the edge of Poupart's ligament, in a manner to be ascertained by the touch, if no tumour below the ligament had prevented examination. The tumour appeared to have arisen in consequence of inflammation communicated to the neighbouring glands and cellular membrane. On the rupture of the sac, which probably took place some days before death, mortification completely obliterated all traces of it.

The bladder was in its natural state, and the uterus was filled with the monthly secretion.

The symptoms produced by inflammation of the urethra; an enlargement of one of the inguinal glands; the discharge of pus from the urethra, which might readily give rise to a swelling of that nature, and her constitutional tendency to nephritis, together with the successful application of the ordinary remedies for this complaint on the first attack, tended to render the case complicated and obscure to the attending physician.

In her second attack, the symptoms of suppressed menstruation, in addition to her constitutional predisposition, the small size of the strangulated part of the intestine, together with the great enlargement of the glands, rendered it extremely equivocal and perplexing.

ORIGINAL REVIEWS.

A Treatise containing a plan for the internal organization and government of Marine Hospitals in the United States: together with a scheme for amending and systematizing the Medical Department of the Navy. **By William P. C. Barton. A. M. M. D. Member of the American Philosophical Society, and a Surgeon in the Navy of the United States.**

Si quid novisti rectius istis,
Candidus imperti, si non his utere mecum.
Hor. Epist. vi. lib. i.

Philadelphia, printed for the author. 1814. pp. 244. 8vo.

On the 26th of February, 1811, a law was passed in Congress, for establishing Marine Hospitals in the United States. Mr. Hamilton, who then acted as secretary of the navy, was required by an article of the law, to prepare the necessary rules and regulations for the government of the institutions contemplated, and to report the same at the succeeding session of Congress. Conceiving the subject to be properly within the province of medical men, and not being himself of the profession, he was induced to request our author, at that time an acting surgeon in the navy, to commit to writing his ideas respecting the proper and systematic mode of conducting institutions of this nature, as well as any suggestions for the internal organization of the household that he might deem consistent with economy and health.

The author states, that the outlines of the plan proposed in the work before us were thrown together under circumstances by no means propitious to the undertaking; that subsequent and more mature consideration of the subject has enabled him to render the treatise more worthy of the attention of those persons for whom it was first designed: viz., the Commissioners of the Marine Hospital fund. In this improved state, with the addition of the second part, treating of the medical department of the navy, it is now offered to the public.

The author has, with great industry, collected the history of the various institutions for the reception of sick and disabled seamen, which are established in Britain and in France. He has minutely described the plan of the buildings, the arrangements of the wards or apartments, the clothing and diet of the pensioners; and has moreover pointed out the number of officers, with their respective salaries; thus conveying a fund of information, which cannot fail of being highly interesting to those for whom the report was intended. It will be impossible for us to follow the author through all these details. Though the work was originally designed for the organization of marine hospitals, and for the regulation and improvement of the medical department of the navy, it contains much information which may be advantageously applied to the preservation of the health of the sailors engaged in the merchant service. Exposed to the severest hardships, deprived of the comforts enjoyed by the meanest labourer on shore, by the discipline which must be established on board of every ship, this useful class of men are dependent on the provision supplied by those in whose service they have engaged. How much the success of commercial enterprise depends upon the healthiness of the crew, it will be deemed unnecessary for us to mention. In recommending to our merchants the perusal of that portion of the work relating to the cleansing and ventilating of ships, together with a detail of the diet that might be allotted to the men, we humbly believe, that we shall serve the cause of humanity, while the profits of the merchant will be increased.

As pointing out the means of preventing and curing one of the severest maladies afflicting those engaged in distant voyages, we shall introduce the following extract.

"The prevalence of scurvy among sailors is ever disastrous and terrific in its consequences. As it is a disease peculiarly incidental to, if not inseparable from, the seafaring life, it becomes the duty of every surgeon of a ship, and every commander, to promote the use of such prophylactics as experience has entitled to a preference. Though the disease does, undoubtedly, sometimes make its appearance in ships, garrisons, &c., where the men have not been confined to a diet of salted meat alone, but have been abundantly supplied with fresh beef, greens, and esculent vegetables and roots, yet there cannot be a doubt, that it generally arises from a long subsistence upon salt junk, assisted in its pernicious effects upon the system, by unavoidable exposure to cold and dampness. The most effectual remedies for this disease, are acids. Of these, juice of lemons, or limes, is to be preferred. Every ship should, therefore, be furnished with such quantities of this article, as may be sufficient to meet the probable wants of the crew."

"The mode of procuring this article from the fruit is extremely simple. The juice is expressed from the lemons, clarified, and a certain portion of rectified spirits of rum, added to it, to keep it from fermentation and spoiling."

"It is prepared in the island of Sicily, and other parts of the Mediterranean. It is purchased on the spot for 1*s.* 6*d.* sterling, (thirty-three cents) per gallon."

In support of the claims which this acid possesses as a specific in the cure of scurvy, our author has given extracts from the narratives of captain Drinkwater and Mr. Cairncross, surgeon, who were present at the memorable siege of Gibraltar, in the year 1780; a period when the scurvy raged to a great degree, and threatened the most alarming consequences. The testimony of these gentlemen strongly confirms the superior and extraordinary virtues of this remedy in the cure of that formidable disease.

From the section relating to the impropriety of frequently wet scrubbing the decks in the Winter season, we shall offer a short extract, with which we shall close the review.

"I am acquainted with no practice more pernicious to the comfort of the men, or more fraught with disease and destruction of life, than that of perpetually drenching the main, gun, and birth decks, with water. The mistaken idea of cleanliness that leads to this practice, cannot be too severely reprobated. It is not at all necessary for me, after all that has been written on the subject by English naval writers, to enter extensively into a consideration of the numerous inconveniences and dangers, consequent upon this ill-judged practice. It is not the object of this work to dive into medical disquisitions, but to call the attention of the navy to such points, relative to the internal economy, as call for reform. I speak now particularly of the wetting the decks in the *Winter season*. I have seen the most destructive sickness induced by this practice, indiscreetly followed during all kinds of weather, rainy, moist, wet, and cold: and I have no hesitation in saying, that, in one instance, I saw a contagious fever produced by it."

"Trotter says, that in the winter of 1793-4, a contagious fever broke out in the Russel, and is of opinion, that the frequent washing of the decks (three times a week) principally caused it." In lieu of which practice, Dr. Barton recommends "dry rubbing with stones and sand, according to the usage in the best regulated ships in the British navy. The gun-deck might be washed once a week, always choosing a fine dry day for the purpose, and the main deck twice. In the intervening time let them be dry rubbed."

The American Artists' Manual, or Dictionary of Practical Knowledge, in the application of Philosophy to the Arts and Manufactures: selected from the most complete European Systems, with original improvements, and appropriate engravings, adapted to the use of the manufacturers of the United States. By JAMES CUTBUSH. In two volumes, with thirty-four plates, and sixty cuts. Pages 1200. Philadelphia, published by Johnson and Warner, and Redwood Fisher.

THE following extract from the preface to the work, will give an idea of its design and execution.

"It was not to be expected, that the United States, possessing such an extensive territory, and with a population so small, compared with the older countries of Europe, where the number of inhabitants insures manual labour, at a moderate price, could have, hitherto, made equal advances in the arts and manufactures. Recent experience has, however, shown us, what the united efforts of industry and enterprise, conducted by the inventive talents of our countrymen, are capable of effecting. The time has already arrived, when a general diffusion of the knowledge of Europe, on these subjects, cannot fail of being highly interesting and beneficial amongst us. And, as we are indebted to foreign publications for some of the best treatises made use of, this necessarily makes the present more a work of selection than of original matter. At the same time it may be observed, that every opportunity to avail himself of the experience of his countrymen, has been sought for by the editor, and much important information has been thus cheerfully afforded him."

We do not hesitate to pronounce this work a very important addition to our stock of practical knowledge. It is evident that much labour and industry have been employed to select the most interesting information on the manufactures of Europe, as well as to give the result of the experience of our own country. The publication is a novel one. At the present period, its utility must be fully appreciated; and we expect it will not only tend to the diffusion of knowledge on the subject of manufactures, but also stimulate to philosophical enquiry, a powerful mean of improving and perfecting our acquaintance with the useful arts. It is highly gratifying to meet with publications of this kind, which unite the means of acquiring practical information with cheapness and convenience.

The plates are numerous and well executed, and the quantity of matter is compressed in a small space, on a good type and paper.

From a book of this nature, it is difficult to make any particular extracts. We may in general observe, that the matter appears to be carefully selected, and judiciously arranged.

MEMOIRS OF J. G. ZIMMERMAN, M. D.

[From the New (London) Medical and Physical Journal; for Aug., 1812.]

John George Zimmerman was born on the 8th day of December, 1728, at Brugg, a small town, situated on the borders of the river Aar, near the castles of Windich and Altemberg, in the canton of Berne, about seventeen miles to the north-west of the city of Zurich in Switzerland.

His father, *John Zimmerman*, whose ancestors had, for a series of years, deservedly obtained the applause and admiration of their fellow citizens, by their personal merits, and patriotic exertions for the interests of the Republic, was eminently distinguished as an able and eloquent member of the provincial council. His mother, who was equally respected and beloved for her good sense, easy manners, and modest virtues, was the daughter of the celebrated *Pache*, who resided at a beautiful villa near Morges, in the same canton, and whose extraordinary learning and great abilities had contributed to advance him to a seat in the Parliament of Paris.

The father of Zimmerman, anxious for the future eminence of his son as a scholar, undertook the arduous task of superintending his education, and, by the assistance of the ablest preceptors that could be procured, instructed him in the rudiments of all the useful and ornamental sciences until he had attained the age of 14 years, when he sent him to the University of Berne, where, under *Kirchberger*, the historian and professor of rhetoric, and *Altman*, the celebrated Greek professor, he studied, for three years, Philology and the Belles Lettres, with unremitting assiduity and attention. Scarcely, however, had he entered on his course of study, when his industry was for a while interrupted by the sudden death of his affectionate father; a misfortune which bereaved him of his ablest instructor, and tore his heart with the severest affliction; but as time softened his filial sorrows, he renewed his studies with unceasing diligence and ardour.

The various and frequently complicated systems of philosophy which have been from time to time introduced into the world, excited his curiosity, and stimulated his industry; and, to render himself a perfect master of this extensive branch of learning, he placed himself under the tuition of *Brunner*, one of the most zealous disciples of the *Baron de Wolf;* but the professor, unfortunately, was only skilled in the metaphysical doctrines of his great master; and, instead of leading the mind of his pupil into the broad and flowery paths of real ethics, he bewildered him in the dark and thorny mazes of vain and useless learning, until *M. Tribolet* and *J. Stapfer*, two ministers of the gospel, equally renowned for exalted piety, ardent genius, and extensive knowledge, happily extricated him from this dangerous labyrinth, and taught him, as he frequently afterwards acknowledged with the warmest gratitude, the sound doctrines of true philosophy.

Having passed nearly five years at the university, he began to think of applying the stores of information he had acquired to the purposes of active life; and, with a view of consulting his mother respecting the profession he should choose, he visited towards the end of the year 1746, his maternal relations at Morges, where she then resided. But, alas! the kind assistance which he fondly hoped to derive upon this important subject from her judgment and opinion, death had rendered it impossible for him to obtain. Distressing, however, as this unexpected event was at such a juncture, it afforded him the advantage of following more freely his own unbiassed inclination; a circumstance which is generally conceived to contribute to success; and, after mentioning the subject cursorily to a few relations, he immediately resolved to follow the practice of physic. The extraordinary fame of *Haller*, who had recently been promoted by King George the Second to a professorship in the University of Gottingen, resounded at this time throughout Europe; and *Zimmerman* determined to prosecute his studies in physic under the auspices of this great and celebrated master. He was admitted into the university on the 12th of September, 1747, and obtained his degree on the 14th of August, 1751. The promising genius of the young pupil induced the professor to receive him with every token of esteem. He ordered an apartment to be provided for him under his own roof; assisted him by his advice; superintended his studies; and behaved to him throughout his future life as a parent, a preceptor, a patron, and a friend. *Zinn*, *Caldani*, and several other eminent men, were at this time studying under *Haller*. The example of the teacher inspired his pupils with the spirit of industrious exertion; and, by their indefatigable industry, and mutual endeavours to prosecute and perfect his discoveries, they not only forwarded the progress of medicinal science, but placed the philosophy of the human body on a more sure and an almost entirely new basis. The genius of *Zimmerman*, however, was too powerful and expansive to be confined exclusively to the study of medicine: the frame and temper of the human mind, natural philosophy, and particularly mathematics, engaged a considerable portion of his attention, and, by the assistance of *M. Segner*, rewarded his toils with a large fund of valuable information. Politics, also, both as they relate to the municipal government of nations, and as they embrace that more important subject which has of late years been so well known in Europe, under the denomination of *statistics*, did not escape his investigation. To relax his mind from these severe studies, he cultivated a complete knowledge of the English language, and became so great a proficient in the polite and elegant literature of this country, that the British Poets, particularly *Shakspeare*, *Pope*, and *Thompson*, were as familiar to him as his favourite authors, *Homer* and *Virgil*. Every moment, in short, of the four years he passed at Gottingen, was employed in the useful and ornamental improvement of his capacious mind, which appears to have been stimulated by a secret presage of his future greatness: for, in a letter written during this period, to his friend *Dr. Tissot*, of Berne, he says, " I pass every hour " of my life here like a man who is determined not to be for- " got by posterity;" and even so early as the year 1751, he produced a work in which he discovered the dawnings of that extraordinary genius which afterwards spread abroad with so much effulgence.* But the ardour of his mind imposed upon his corporeal frame a task too laborious to be continually sustained; and at length his unceasing assiduities, and close application, affected his health, and produced many alarming symptoms of that grievous malady the *hypochondriasis.*

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* *Dissertatio Physiologica de irritabilitate quam publicé defendit*, 4to. 1741.

To divert his mind, and dissipate the baneful effects of this disorder, he quitted the university, and travelled for a few months through Holland, where he formed an acquaintance with the celebrated *Gaubius;* and afterwards visited Paris, where his great abilities, as a scholar and a physician, soon rendered him a conspicuous character. The amusements of Paris, however, and perhaps the envy which his superior merits raised against him in the minds of certain professional competitors, made his residence in this vitiated and tumultuous metropolis irksome and disagreeable to him; and towards the year 1752, he returned to Berne, where he enjoyed the double satisfaction of acquiring a considerable degree of practice, and of being received by all his former friends with open arms and unfeigned cordiality. During the early part of his residence at Berne, he published many excellent essays on various subjects in the *Helvetic Journal;* particularly a work on the talents and erudition of *Haller.* This grateful tribute to the just merits of his friend and benefactor, he afterwards enlarged into a complete history of his life and writings, as a scholar, a philosopher, a physician, and a man. It was published at Zurich, in one large volume octavo, and was received, as in the opinion of *Tissot* it highly deserved, with uncommon testimonies of applause.

The health of *Haller*, which had suffered greatly by the severity of study, seemed to decline in proportion as his fame increased; and, obtaining permission to leave Gottingen, he repaired to Berne, to visit his friends and to try, by the advice and assistance of *Zimmerman*, to restore, if possible, his decayed constitution. The benefits he experienced in a short time were so great, that he determined to relinquish his professorship, and to pass the remainder of his days amidst the caresses of his friends, and the comforts of his family, in this city. He accordingly requested *Zimmerman* to settle his affairs at the university, and to accompany *Madame Haller* and her household to the new abode which had been previously provided at Berne for their reception. This embassy he performed with a pleasure flowing not only from the happiness he anticipated from the company and conversation of this agreeable and friendly family, but from a cause which was perhaps still more interesting to his heart. In the family of *Haller* lived a young lady, nearly related to him, whose maiden name was *Meky*, and whose husband, *M. Stek*, had been sometime dead. This lady, besides a sound and highly cultivated understanding, a refined taste, a quick and lively fancy, and a very brilliant imagination, possessed perhaps what is superior even to these endowments, those polite and elegant manners, that amiable mildness and serenity of temper, and that winning softness of voice, which render the sex so irresistibly charming, and insure the happiness of a husband. *Zimmerman*, whose devotion to study had not extinguished the tender sensibilities of his heart, became deeply enamoured with her charms. He offered her his hand in marriage; and, after passing some time in the gentle assiduities of love, they were united at the altar in the bands of mutual affection.

Soon after his union with this amiable woman, the situation of Physician to the town of Brugg became vacant, which he was invited by the inhabitants to fill. The regular salary annexed to this appointment was extremely small, considering the extent and population of the town; but there is something particularly fascinating to a sentimental mind in the place of early infancy; and when *Zimmerman* considered the number of relations and friends by whom he would be surrounded, he relinquished all the pleasures and advantages he enjoyed at Berne, and returned to the place of his nativity, with a view to settle himself there for life; and the practice which he immediately acquired throughout the town and surrounding country was equal to that of his friend *Dr. Hotze*, of Richterswyk. His time, however, was not so entirely engrossed by the duties of his profession as to prevent him from indulging his mind, always eager to acquire new information, in the pursuits of literature; and he read almost every work of reputed merit, whether of Physic, Morals, Philosophy, Belles Lettres, History, Voyages, or even Novels and Romances, which the various presses of Europe from time to time produced. The novels and romances of England in particular, afforded him great delight. The thoughts and opinions which occurred to him during this course of reading, he frequently committed to writing in the form of essays, and inserted many of them in a periodical paper called the Monitor, which was then published by the Philological Society at Zurich.

In the course of time *Zimmerman* added to the character of husband the pleasing relation of father, and enjoyed, in the birth of a son, and afterwards of a daughter, all that could fill the bosom of a parent with joy; health, competency, and domestic comfort. The company of his wife's mother also, a woman of extraordinary understanding, and singular endowments, and who formed a part of his household, contributed not a little to increase his felicity.

But perfect felicity is not the lot of man; and *Zimmerman*, though surrounded by every enjoyment which is usually conceived to bestow happiness, suffered a secret uneasiness to prey upon his mind. The amusements which Brugg afforded were extremely confined; and he frequently sighed for the enjoyment of that general society, in which he had found so much satisfaction and delight at Berne, at Gottingen, and at Paris. It is true, that he had many amiable friends at Brugg, but they had all their own concerns to attend to, and had little time to devote to the company of any individual. A man of letters requires a public library and periodical publications to resort to, new acquaintances to converse with, professional associates to whom he can communicate his various discoveries; all of which *Zimmerman* was in a great measure deprived of at Brugg; and the want of these resources made such a deep impression on his mind, that he fell into a state of nervous languor, or rather into a peevish dejection of spirits, and neglecting all public society, devoted himself almost entirely to a retired and sedentary life. His family was almost the only company he conversed with; study and composition the sole amusement of his leisure hours; and a correspondence with a few distant friends, particularly Dr. *Tissot*, Professor *Bonnet*, Dr. *Macard*, Dr. *Lettsom*, and the celebrated Mr. *Deluc*, her Majesty's librarian at Windsor, his only relief against the melancholy and vexation that oppressed his mind. There is an art in being happy, which every man, who enjoys health, leisure, and competency, may in all places attain, *omne solum est patria fortis;* but every person is not possessed of it; and there are, indeed, men of very extraordinary talents, and great abilities, who are sometimes so weak, or rather so foolish, as to despise it. It is easy to image the happiness of particular conditions until we can be content with no other; but there is no condition whatever, under which a certain degree of happiness may not be attained by those who are inclined to be happy.

The great *Haller* conceived it to be of as much importance to happiness to gain the esteem as the admiration of mankind; and *Zimmerman* might upon this subject have followed, with infinite advantage, the example of his illustrious friend, who, by condescending to indulge the innocent humour and frailties of those around him, rendered himself beloved by all who knew him; and by this means, while he promoted the happiness of others, insured his own. But "a man of letters," as Dr. *Johnson* observes, "for the most part spends in the privacies of study that season of life in which the manners are "to be softened into ease, and polished into elegance; and "when he has gained knowledge enough to be respected, has "neglected the minuter arts by which he might have pleased." *Zimmerman*, indeed, frequently blamed himself for indulging this saturnine disposition, and was far from considering retirement as a duty; but he seldom had courage enough to renounce the pleasures it bestowed on him; and it was by reflecting deeply on its effects, that he was enabled so justly to appreciate its advantages.

The love of Solitude, which this disposition so strongly engendered in his mind, was not, however, suffered to interrupt in any degree the regular discharge of his professional duties; all appearance of depression vanished the moment he approached the bed of sickness; and he seldom visited a patient whom he did not afterwards find a friend.

Under these circumstances, this excellent and able man passed fourteen years of an uneasy life; but neither his increasing practice, the success of his literary pursuits,* the exhortations of his friends, nor the endeavours of his family, were able to remove the melancholy and discontent that preyed continually on his mind. The theatre on which he acted seemed too confined for the exercise of his great and extraordinary talents; and his friends conceiving that his mind might be restored to its former tone, by changing the scene and enlarging his sphere of action, endeavoured to procure him promotion. After some fruitless efforts to please him, he was, in the beginning of April, 1768, appointed, by the interest of Dr. *Tissot* and *Baron Hockstetten*, to the post of principal Physician to the King of Great Britain, at Hanover; and he departed from Brugg, to take possession of his new office, on the 4th of July, in the same year. But the hopes with which his friends had fondly flattered themselves upon this subject, were, alas! in a short time, sorrowfully disappointed. The carriage in which he and his family were conveyed to their new residence was overturned just as it was entering the gates of Hanover, and his wife's mother received a compound fracture in her leg. In three days after his arrival, death deprived him of a valuable friend, one of the Lords of the Regency, who had long entertained for him a sincere affection, and most cordial esteem. His colleague, jealous of his superior merit and increasing fame, contrived to vex and thwart him in the discharge of his official duties. A local disorder, under which he had laboured for many years, and which was frequently attended with excruciating pain, grew worse; and, to add still more to his misfortunes, the health of *Madame Zimmerman*, which was always very considerably influenced by his own, visibly declined. Happily, amidst this variety of vexations, his extraordinary merit forced him into very great and extensive practice, which, together with the company and correspondence he regularly maintained with his friends, engrossed his time, and prevented the recollection of his cares from preying on his mind. Scarcely, however, had he recovered his health and spirits, when he was again plunged into the deepest affliction by the loss of his amiable wife, who, after many years of lingering sufferance, and pious resignation, expired in his arms on the 23d of June, 1770. The deep and poignant sorrow he felt on this misfortune, increased the local complaint under which he laboured to so dreadful a degree, that he was obliged, on the 11th of June, 1771, to repair to Berlin, and place himself under the care of *M. Meckel*, a celebrated surgeon, for the purpose of undergoing an operation. It was performed with great skill; and he received such perfect relief, as to be able to enjoy society always with vivacity, and frequently with ease. This period, indeed, seems to have been the happiest of his life: he had the inexpressible gratification of finding himself relieved from a long and cruel complaint, of enjoying the charms of a most agreeable private society, of being universally received with the greatest attention, and of becoming acquainted with many literary characters in Germany. His reception, on his return to Hanover, was equally pleasing, and he flattered himself that he should at last enjoy a permanent state of health. But he seemed, alas! destined to experience a constant vicissitude of pleasure, and of pain; for, in a short time after his return, he experienced another source of inquietude in the death of his wife's mother, who, except his son and daughter, whose education she had undertaken to superintend, was the only companion of his domestic hours. His children too, those common comforts to a parent under affliction, were to him additional causes of the keenest anguish and the deepest distress. His daughter had, from her earliest infancy, discovered symptoms of consumption, so strong and inveterate as to defy all the powers of medicine. During their residence in Swisserland, a young man, "as handsome in his person as he was amiable in the qualities of his mind," had, after a long intimacy, conceived a violent attachment for her: he was "the object of her first, of her only affection;" and it was mutually agreed by their parents to unite them, in proper time, in the bands of matrimony; but, soon after her removal to Hanover, it seems that, for some cause, which does not clearly appear, he put a period to his existence. This dreadful event gave a violent shock to her feeble constitution, and threw her into a languishing complaint, which at length ended in a hæmorrhage of the lungs, and in the summer of 1781 destroyed her life.

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* The following is a correct list of his writings, in the order in which they appear to have been published.

1. Dissertatio Inauguralis de Irritabilitate, 4to. Gottingen, 1755.
2. The Life of Professor *Haller*, 8vo. Zurich, 1755.
3. Thoughts on the Earthquake which was felt on the 9th of December, 1755, in Swisserland, 4to. 1756.
4. The Subversion of Lisbon, a Poem, 4to. 1756,
5. Meditations on Solitude, 8vo. 1756.
6. Essay on National Pride, 8vo. Zurich, 1764.
7. Treatise on Experience in Physic, 8vo. Zurich, 1764.
8. Treatise on the Dysentery, 8vo. Zurich, 1767.
9. Essay on Solitude, 4to. 1773.
10. Essay on Lavater's Physiognomy, Hanover, 1778.
11. Essays, consisting of agreeable and instructive Tales, 8vo. 1779.
12. Conversations with the King of Prussia.
13. Treatise on Frederick the Great, 1788.
14. Select Views of the Life, Reign, and Character of Frederick the Great.
15. A Variety of Works published in the Helvetic Journal, and in the Journals of the Physiological Society at Zurich.
16. A Work on Zoology.

But the state and condition of his son was still more distressing to his feelings than even the death of his beloved daughter. This unhappy youth, who, while he was at the university, discovered the finest fancy and the soundest understanding, either from a malignant and inveterate species of scrophula, with which he had been periodically tortured from his earliest infancy, or from too close an application to study, fell very early in life into a state of bodily infirmity and mental languor, which terminated in the month of December, 1777, in a total derangement of his faculties; and he continued, in spite of every endeavour to restore him, a perfect idiot for more than twenty years.

The domestic comforts of *Zimmerman* were now almost entirely destroyed: he had no one, except *Madame de Dering*, the sister of *M. Strube*, Secretary of State, with whom he could "hold communion sweet and large;" and she, to complete his misery, was obliged soon afterwards to leave Hanover, and attend her husband to a distant part of Germany, where he had lately been appointed to a new employment.

The unhappy and comfortless situation of *Zimmerman*, with whom she had lived on terms of the purest friendship during his residence at Hanover, made a deep impression on her mind, and called forth all the tenderest feelings of her heart. Wisely conceiving that the only chance of preventing him from falling a victim to his affections, was by uniting him once more in matrimony with some object worthy of his choice, she carefully examined the character and disposition of her female friends, and at length fixed upon the daughter of *M. Berger*, the King's Physician at *Lunenbourg*, and niece to *Baron de Berger*, as a person in every respect qualified to make him happy. *Madame de Dering* managed the introduction with great delicacy and address; and had the pleasure to observe, soon afterwards, that the sentiments of the parties corresponded perfectly with her own. A friendship founded on a reciprocity of taste and disposition, ripened very quickly into the tenderest affection; and they were united to each other in marriage about the beginning of October, 1782. *Zimmerman* was nearly thirty years older than his bride: but genius and good sense are always young; and the similarity of their characters obliterated all recollection of disparity of age. She was well acquainted with the English language; spoke Italian with great elegance and correctness; revised his compositions with critical taste and sound judgment; and continued to the last moment of her life his tutelar deity, a pleasing companion of his prosperity, and his support and consolation in adversity. He went with her into company, had frequent parties at his own house, and enjoyed an agreeable society, which restored him occasionally to his former gaiety and good humour.

It was at this period that he composed his great and favourite work on *Solitude*, thirty years after the publication of his first essay on the subject. It consists of four volumes in quarto; the two first of which were published in 1784; and the remaining volumes in 1786. " A work," says *Tissot*, " which " will always be read with as much profit as pleasure, as it " contains the most sublime conceptions, the greatest sagacity " of observation, and extreme propriety of application, much "ability in the choice of examples, and (what I cannot "commend too highly, because I can say nothing that does "him so much honour, nor give him any praise that would "be more gratifying to his own heart) a constant anxiety for "the interests of *religion*, with the sacred and solemn truths "of which his mind was most devoutly impressed."

During his residence at Berlin, in 1771, he had been invited to Potzdam by the King of Prussia, and had frequent conferences with his Majesty respecting the state of his health. The particulars of these conferences he communicated by letter to a friend, who, anxious to promulgate the honour *Zimmerman* had received, shewed it very injudiciously to several persons, from whose communications it was, without the author's consent, at length published; but in so false and mutilated a state, that he was induced to print a genuine copy of it in his own name. The king, while he was reviewing his troops in Silesia, in the autumn of the year 1785, caught a severe cold, which settled on his lungs, and in the course of nine months brought on symptoms of an approaching dropsy. *Zimmerman*, by two very flattering letters of the 6th and 16th of June, 1786, was solicited by his Majesty to attend him, and he arrived at Potzdam on the 23d of the same month; but he immediately discovered that his royal patient had little hopes of recovery; and, after trying the effect of such medicines as he thought most likely to afford relief, he returned to Hanover on the 11th of July following,* where he published a very particular and interesting account of his journey, and of the various conversations he had had with the King. He had, indeed, from his youth, attended to the history of the King of Prussia with that interest with which the man of genius follows the career of a great character, and entertained a high admiration of the talents, and a firm attachment to the person, of this hero. But it was not *Frederick* alone who discovered his abilities. When, in the year 1788, the melancholy state of the King of England's health alarmed the affection of his subjects, and produced an anxiety throughout Europe for his' recovery, the Government of Hanover dispatched *Zimmerman* to Holland, that he might be nearer London, in case his presence there became necessary; and he continued at the Hague until all danger was over. The invitation of the discerning *Frederick*, and the selection of the Hanoverian Minister, who had for twenty years witnessed his abilities, gave new and flattering testimonies of his medical skill, and afforded him that highly pleasing gratification which accompanies a consciousness of the public esteem. Beloved by his particular friends, enjoying the confidence of three most potent sovereigns, possessing the voluntary approbation of the public, an ample fortune, and all the comforts of domestic life, his situation seemed to afford him once more the prospect of returning happiness. But we must not estimate the prospects of felicity by the complexion of exterior circumstances. Disease frequently racked his body with excruciating anguish; and his mind, enervated, perhaps, by the blandishments of prosperity, occasionally recoiled upon itself, and plunged him into languor and despondency. A new series of vexations also, proceeding from two different causes, sprung up at this period, and continued to poison all the sources of his happiness during the remainder of his life.

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* The King only survived the departure of his physician five weeks: he died on the 11th of August, 1789.

Zimmerman seems to have either forgot or despised the danger which always accompanies the task of writing the history of monarchs during the lives of their contemporaries; but he admired the character of the *King of Prussia* with enthusiastic ardour; and even so far from viewing it in the light in which it was placed by a work written by *Mirabeau*, and published in 1788, intitled, "*The Prussian Monarchy*," that he boldly entered the lists in favour of his royal friend, and published first a pamphlet, intitled, "*A defence of Frederick the Great against the Count de Mirabeau:*" and afterwards, in the year 1790, a work in three volumes octavo, intitled, "*Select views of the Life, Character, and Reign of Frederick the Great, King of Prussia.*" These works, besides many strong political observations and anecdotes of particular characters, contained many severe animadversions on the irreligion which prevailed at Berlin, and drew down on the head of their author all the rancour of private animosity and party spirit. Truth, however, was in general on his side; and he ought to have treated the malevolent censures and illiberal attacks of his opponents with the cold and silent contempt they deserved; but men of irritable nerves are apt to be deeply affected by trifles, and the virulence with which he was pursued on this occasion gave him much vexation.

The second cause of his chagrin, at this period, arose from his strong attachment to the cause of religion, the interests of human nature, and the danger to which he saw all social order was imminently exposed. It was the anxiety and mortification he experienced upon this occasion that gave the fatal blow to his declining health, and at length deprived him prematurely of his existence; for every thing that related to the happiness not merely of individuals, but of mankind in general, was extremely dear to him; and he might well exclaim,

Homo sum, nihil humani à me alienum puto.

Morality and politics, or those principles on which the happiness of private life and the security of public order so essentially depend, had ever been subjects of his attention. The political productions of *Montesquieu* and *Rousseau*, especially those two celebrated works, *The Spirit of Laws*, and *The Social Contract*, he had deeply studied; and his writings in general, but more particularly his works on *National Pride and Solitude*, demonstrate his constant anxiety for the public welfare. The celebrity of *Rousseau*, and the prevailing propensity to follow his political tenets, caused him to regret the many erroneous positions contained in *The Social Contract*, and induced him to refute those parts of it in which the author endeavours to sap the foundation of all religious principles. In composing his *Essay on Solitude*, he was led to inquire into the rise, the progress, and the principles, of different religious sects, and to estimate their probable influence and effects upon governments; and he became firmly persuaded, to use the expression of *Tissot*, that they are "the cuckow's eggs, which can never be permitted to be hatched without endangering the public tranquillity." A new and extraordinary society had sprung up under his own observation, which engaged his whole attention, and which well merited that of the civilized world, since it is now clear, that the great object of it was no less than to abolish all religion, to subvert social order, and to destroy thereby the happiness of mankind. This confederacy, which was denominated "*The Secret Society of the Illuminated*," had become extremely formidable in Germany; and *Zimmerman*, well acquainted with the pernicious tendency of its principles, earnestly endeavoured to oppose them, by interesting those whom it most concerned to prevent their effects, The pretence of its members was the *happiness of the people;* and, supposing this happiness to be incompatible with every species of religion and civil establishment at present existing, they cried with one voice, "*Let us destroy them all, and raze their very foundations.*" It included, in short, among its dark designs, the whole of the doctrine which the Jacobins of Paris have since so fatally put in practice; and it has been proved, by the most irrefragable documents,* that they not only maintained an intimate correspondence together long before the revolution, but that the destruction of the Christian religion, and the subversion of every throne, and of all governments, was, ever since the year 1776, the secret aim and sole object of these orders. They adopted, in short, that execrable observation known and celebrated in France and generally attributed to *Diderot:* "*Mankind will never be perfectly happy* "*and free, until the last of kings shall be strangled with the bowels of the last of priests.*" The society of the *Illuminated* was composed of five distinct classes of members, who were sounded, prepared, and raised step by step, as they discovered themselves worthy to be trusted with its mischievous mysteries. This mode of introduction, so consonant to the nature of the assembly, was first suggested in the year 1782, by *Baron de Knigge;* and, by the insinuating manners and captivating language which the principal managers well knew how to use, the number of affiliated members increased from day to day. Many honest men had grieved in silence, on perceiving the evils which were likely to result from the baleful doctrines propagated, with equal art and industry, by this dangerous combination: but *Zimmerman* was the first who had the courage to unveil the dangerous principles of these new philosophers, to exhibit to the eyes of the German princes the risk they ran in neglecting to oppose the progress of so formidable a league. He convinced them, and particularly the Emperor *Leopold the Second*, that the views of these *illuminated* conspirators were the destruction of Christianity, and the subversion of all regular government; and that many courtiers, ministers, judges, officers in the army, prelates of the Roman church, an immense number of inferior ecclesiastics, and even some of the sovereign princes of Germany, were not only tainted by the new doctrines, but active members of the society. These exertions, while they contributed to lessen the danger which threatened his adopted country, greatly impaired his health. Deeply impressed, however, with the importance of his cause, he prosecuted his labours with unremitting attention, and devoted the hours of repose, both early in the morning, and late in the evening, to this arduous task. He seems, indeed, to have been urged by something like personal consideration; for, in a letter which he wrote to his friend *Dr. Tissot*, on the 4th of October, 1794, he says, "I may yet, before the year expires, "become a poor distressed emigrant, forced to leave his house "with the dear partner of his cares, without knowing where "to hide his head, or find a bed on which to die;" and certainly, the invasion of the electorate, the sacking of Hanover, and the necessity of abandoning it, were at that time much to be feared; for negociating alone saved a country which its arms were incapable of defending. These sentiments announce the deep depression of his mind, and evince the loss of that firm tone and vigorous exertion which was necessary to support his last endeavours to repel the impending calamity. His spirits, indeed, had received a shock from which they were unable to recover, even when the danger was removed. In the month of November, 1794, he was obliged to have recourse to strong opiates to procure even a short repose: his appetite decreased; his strength failed him; and he became so weak and emaciated, that, in January, 1795, when he was induced to visit a few patients in his carriage, it was painful to him to write a prescription, and he frequently fainted while ascending to the room. These symptoms were followed by a dizziness in his head, which obliged him to relinquish all business. At length the axis of his brain gave way, and reduced him to such a state of mental imbecility, that he was haunted continually by an idea that the enemy was plundering his house, and that he and his family were reduced to a state of misery and want. His medical friends, particularly *Dr. Wichman*, by whom he was constantly attended, contributed their advice and assistance to restore him to health; and, conceiving that a journey, and change of air, were the best remedies that could be applied, they sent him to Eutin, in the duchy of Holstein, where he continued three months, and, about the month of June, 1795, he returned to Hanover greatly recovered. But the fatal dart had infixed itself too deeply to be entirely removed; he soon afterwards relapsed into his former imbecility, and barely existed in lingering sufferance for many months, refusing to take any medicines, and scarcely any food. He frequently said to his physicians, "*My death I perceive will be slow and painful;*" and, about fourteen hours before he died, he exclaimed, "*Leave me to myself; I am dying.*" At length his emaciated body and exhausted mind sunk beneath the burden of mortality, and he expired, without a groan, on the 7th of October, 1795.

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* See Memoirs for the Plenipotentiaries assembled at Soissons, in which is demonstrated how prejudicial the society of Jesuits are to church and state.

MEDICAL AND PHILOSOPHICAL INTELLIGENCE.

[From the New Medical and Physical Journal, for October, 1812.]

A very interesting Account of a Journey, undertaken in 1807, by M. VALENBERG, under the auspices of the Academy of Sciences of Sweden, for the purpose of determining the height of the mountains of Lapland, and observing their temperature, was lately published at Stockholm.—The mountains visited by M. Valenberg, make a part of the great chain which runs through Sweden and Norway, and stretches in some of its branches even to Finland and Russia. They are situated between 67 degrees and 68 degrees north latitude, and belong to the Polar regions. On several points their bases are washed by the sea, and from their summits the immense plain of the Northern Ocean is discoverable. These mountains had been only hitherto viewed in all their majestic grandeur by the Lapland Nomade, following his flocks of deer and his game. A few travellers had contemplated them at a distance, and M. de Bruck, a learned German, during his travels in Norway, approached within a short space of them; but no person had ever penetrated into this asylum of Nature, and attempted to struggle with the difficulties of ascending these summits, eternally covered with snow and ice.

The undertaking was difficult in many respects. The ascents were most excessively steep, and in climbing them the traveller was by turns suspended over deep excavations, lakes, and torrents, bottomless marshes and gulphs. He had no intelligent guide, there was no habitation on his route, and no assistance to be expected. He frequently was obliged to make circuits of many leagues to reach a summit; and he crossed not only snow and ice full of crevices, but also marshes, where he ran a continual risk of being buried in the mud and stagnant water. He passed the nights on naked rocks, without a tent or the smallest shelter; and he was frequently reduced to quench his devouring thirst by swallowing snow, which occasioned him inflammations and painful suppurations in the mouth.

M. de Valenberg's measurements give the Lapland mountains an elevation from 5 to 6,000 feet above the level of the sea. Although this elevation is less than that of the mountains of Switzerland and the Pyrenees, all the phenomena of the Alpine regions, and particularly the Glaciers, are observable. At such a proximity to the polar circle, the region of eternal snow commences at nearly 4,000 feet above the ocean, while in the Alps it begins from 7 to 8,000, and in the Pyrenees at 8,000 feet.

On the 14th of July, M. de Valenberg ascended the most considerable glacier, called Sulitelma, a Lapland word, which signifies Solemn mountain, because formerly the Laplanders adored on one of its summits their principal idol. This mountain, which is the Mount Blanc of the north, is composed of a succession of summits, of which the base has an extent of several leagues. Its greatest elevation is 5700 feet above the sea. To reach this elevation, our traveller was obliged to make his way over enormous crevices, where recently before some hunters had been engulphed with their deer and their dogs. Seas of ice have descended into the vallies 700 feet below the line of snow. There is a border of earth surrounds the ice, consisting of slime and stones. The ice of Sulitelma is very clear, and almost transparent; it is as hard as stone, but not so heavy as the ice of the sea. The traveller gives several details respecting its internal composition, the figures by which it is characterized, and the crevices formed on it. The snow is sometimes 100 feet in depth, and so hard that the footsteps leave no mark on it. That which is detached from the summits, or crevices, rolls to immense distances. Fortunately, these avalanches, in their descent, act only on inanimate nature; whatever direction they take, they seldom encounter living beings, or the abodes of men; all is desert in these regions for vast extents, where industry has gained no conquest over the solitary domain of the primitive creation.

Our traveller terminates his account by general considerations on the temperature, and by tables of meteorological observations. He determines with precision the different regions of the mountains, and characterizes them by the productions which be found there. In proportion as the line of snow is approached, the productive force of Nature diminishes, and men, brute animals, and plants, yield to the rigour of the cold. At 2600 feet below the line, the pines disappear, as well as the cattle and habitations. At 2000 feet, the only tree is the birch; and its degraded form and indigent verdure, attest the inclemency of the climate; at the same altitude the greatest number of wild animals disappear, and the lakes contain no fish. At 800 feet below the same line of snow, the Laplander's progress is stopped for want of moss to his rein deer. Above the line, every thing presents the picture of agony and death. The most robust lichens are only to be found at 1000 feet in the crevices of perpendicular rocks, and the bird named *emboriza nivalis* is the only living creature to be seen. The heat does not rise one degree of Reaumur in the region which is 5000 feet above the sea.

Lachesis Lapponica, or a Tour in Lapland, now first published from the Original Manuscript Journal of the celebrated Linnæus. By James Edward Smith, M. D. F. R. S. &c. President of the Linnæan Society.

[From the Edinburgh Medical and Surgical Journal, for October, 1811.]

When we commenced our plan of selecting from voyages and travels, and works upon general subjects, such extracts as in any way promoted the advancement of our professional knowledge, we had no idea that Linnæus himself should contribute to the value of our periodical publication. We have often had occasion to rejoice that the manuscrips, herbarium, and library of the illustrious Swede fell into the hands of a gentleman who has shown himself so worthy of possessing them. Through his zeal and devotion to the study of nature, they have been kept in a state of unremitting activity, instead of being left to waste and moulder in the useless museum of a foreign potentate. We doubt even if the present Journal, notwithstanding the value attached to it, after it had been permitted to be sold and carried out of the country, would ever have been communicated to the public, if unfortunately the King of Sweden had succeeded in his design of intercepting the Linnæan collection.

"The biographers of Linnæus have often mentioned the Journal of his Lapland Tour, to which he himself has frequently adverted, in various parts of his voluminous works, under the title of *Lachesis Lapponica*. The publication of this Journal has been anxiously desired; and so valuable was the manuscript considered, that on his whole collection and library being sold, after the death of his son, it was remarked that these papers at least ought to have been detained in Sweden, as a national property; the journey which they record having been undertaken at the public expense, and the objects illustrated thereby being, necessarily, more important to the author's countrymen than to any other people. This remark, however, was not made till long after the manuscript, with all the treasures which accompanied it, had escaped, by land and by sea, the pursuit instituted by the Swedish monarch to recover them, and had reached England in safety. It became a duty for their fortunate possessor to render them useful." Pref. p. vii. viii.

In carrying this laudable design into effect, difficulties occurred in decyphering and translating the original notes, which nothing short of the zeal of Dr. Smith could have overcome. But we are not only indebted to the President of the Linnæan Society for having given us this work, but also for the manner in which he has given it to us. While the three weeks ramble of every superficial traveller is now made to assume the imposing and extravagant form of imperial quarto, the scientific tour of the great Linnæus, through an almost unknown country, is presented in moderate but respectable octavo. It cannot be uninteresting to know Linnæus's preparations for such a journey; to know how much he depended upon his own energies—how little he valued adventitious assistance.

"Having been appointed by the Royal Academy of Sciences to travel through Lapland, for the purpose of investigating the three kingdoms of nature in that country, I prepared my wearing apparel and other necessaries for the journey as follows:

"My clothes consisted of a light coat of Westgothland linsey-wolsey cloth without folds, lined with red shalloon, having small cuffs and collar of shagg; leather breeches; a round wig; a green leather cap, and a pair of half-boots. I carried a small leather bag, half an ell in length, but somewhat less in breadth, furnished on one side with hooks and eyes, so that it could be opened and shut at pleasure. This bag contained one shirt, two pair of false sleeves, two half shirts, an inkstand, pencase, microscope, and spying-glass, a gauze cap to protect me occasionally from the gnats, a comb, my journal, and a parcel of paper stitched together for drying plants, both in folio, my manuscript Ornithology, *Flora Uplandica* and *Characteres generici*. I wore a hanger at my side, and carried a small fowling-piece, as well as an octangular stick, graduated for the purpose of measuring. My pocket-book contained a passport from the Governor of Upsal, and a recommendation from the Academy." I. p. 1, 2.

Linnæus proceeded from Upsal northwards, along the west side of the Gulf of Bothnia, till he came to Tornea, at its northern extremity, and he returned along the eastern side to Abo, from which he crossed the Gulf to Upsal. But from Umoea, Pithoea, Lulea, and Tornea, he penetrated into various districts of Lapland, upon one occasion crossing even to the coast of Norway. As must necessarily occur in a journal, the same observations are frequently repeated, but still that repetition is not altogether without its use, as they refer to different places. We shall begin our extracts with what he has said of the diseases of the people whom he visited, their modes of cure and prejudices.

When in Lycksele Lapland, he says he made some inquiries concerning the diseases of the people.

"When, as occasionally happens in the course of the summer, they cannot procure fresh water, and are necessitated to drink the warm sea water, they are infallibly tormented with griping pains, with strong spasms in the region of the stomach, and pain in the lower part of the abdomen, accompanied with bloody urine. This is a species of cholic, and is called *ullem*. It generally lasts but one day, rarely two. The same thing happens if they drink before they have broke their fast in a morning." I. p. 126, 7.

"They are subject to the *ullem*, or colic, of which I have already spoken, p. 127, for which they use soot, snuff, salt, and other remedies. The pain sometimes seizes them so violently that they crawl on the ground while it lasts, not being able to stand or lie still. They are also afflicted with the asthma, epilepsy, and a swelling of the *uvula*. The husband of a woman who had the last-mentioned disorder, cut away a part of the swelling, but it grew as large again in the course of a twelvemonth. The *prolapsus uteri* also sometimes occurs.

"Many persons have the pleurisy, and others rheumatic complaints in the back, which descend down the hips and legs, leaving the part first attacked. These complaints happen in summer as well as in winter." I. p. 136, 7.

"As to the diseases of these people, I was informed here that fevers are very rare indeed, and that the small-pox is also of very unfrequent occurrence. Hence, when it does come, many old people with grey hairs fall a sacrifice to the latter disorder, which, however, is not widely communicated, any more than fever, because of the very thin population. Of intermittent fever I met with only one example, and of *calculus* another. They cure a cough by sulphur laid on the lighted fungus which serves them as tinder, or on the fire, the smoke of which inhaled into the lungs is esteemed a specific; but it is a very fallacious one. For the headache a small bit of the aforesaid fungus is laid on the place where the pain is most violent, and being set on fire, it burns slowly till the part is excoriated. This therefore is the *moxa* of the Laplanders. In case of a *prolapsus uvulæ* they cut off the protuberance with a pair of scissors. For the colic or belly-ache they rub the nails with salt, besides which, they administer oil internally." I. p. 170, 1.

When at Lulea, he observes,

"The inhabitants here are frequently afflicted with the scurvy, whence arise ulcers of the mouth and *uvula*, ulcerous sores and swelling of the feet, as well as aching pains in the legs and feet, and dropsical swellings of the latter." I. p. 239.

The diseases of the Lapland Alps he thus describes:

"I was informed that in this neighbourhood the inoculated small-pox is remarkably fatal. If the patients have but seventy or eighty pustules, they die of it as of the plague. They fly to the mountains, when infected, and die. The same is the case with the measles. It appears that both these diseases are aggravated by the violent cold, whence the patients die in so miserable a manner.

"Swelled necks (goitres) are frequent.

"Sore eyes are universal, especially in the spring, when the Laplanders remove towards the Alps. The glittering of the snow has then a pernicious effect on their eyes. Aged people are very often blind.

"Female obstructions are rare, though sometimes met with among the better sort of people; neither are the *catamenia* immoderate, nor in common so copious as with us. The Lapland women are entirely ignorant of the *leucorrhœa*.

"Of hysterics I met with but two cases. One maid-servant, twenty-four years of age, had the complaint about once a-year; another about thirty, was attacked with it monthly during the summer.

"Epilepsy sometimes occurs. Headaches are frequent; hence the forehead is often full of scars (from the application of their *toule* or *moxa;* see Vol. I. p. 274.)

"Elderly people are often hard of hearing.

"The sleep of the Laplanders is commonly sound, and they are in the habit of sleeping or waking whenever they please.

"A swelling or falling down of the *uvula* is not uncommon, in which case they frequently cut off the part affected.

"When children are troubled with swellings in the glands about the throat, the usual remedy is to prick the part, and suck out the blood, which is considered as a speedy and effectual cure. If this method be not adopted, they suppose the blood would rise to the head, and cause cutaneous eruptions there.

"Coughs are of very rare occurrence, notwithstanding the constant practice of drinking snow and ice water, even after swallowing pure grease or fat, which perhaps may prevent its bad consequences. However this may be, the Laplanders seldom die from catching cold. Cases of *phthisis*, or consumption do indeed now and then occur among them, and pleurisies are very common, especially in spring and autumn. Lumbago, or pain in the back, is most prevalent during the summer. For this, as I have already mentioned, Vol. I. p. 274, actual cautery, by means of their *toule* or *moxa*, is often applied.

"Bleeding at the nose chiefly happens among those Lapland women who are in the service of the colonists, and who, in consequence of certain obstructions, are subject also to œdematous swellings of the feet.

"I have not heard of a single instance of jaundice.

"Some elderly people are afflicted with asthma; and hoarseness now and then occurs in the winter and spring.

"The stone and gout are entirely unknown amongst the Laplanders.

"Swellings of the lower extremities are uncommon, as these people are in the habit of swathing their legs, which renders them all slender and well-shaped. All dropsical complaints indeed are very rare, though I did meet with one case of this kind.

"Of *tenesmus* I happened to hear of but a single instance, though the Laplanders eat so much cheese and drink water.

"Disorders in the stomach are not uncommon, which are frequently attended with *diarrhœa*, and in some years this disease is contagious." II. p. 32-5.

Concerning the ophthalmia of the Laplanders he is more minute.

"All the Laplanders are usually blear-eyed, so that one would think the word *Lappi* (Laplanders) was derived from *lippi* (blear-eyed.) The causes of this inconvenience are various, but chiefly the following:

"1. The sharp winds. In the early part of my journey, repeated exposure to stormy weather rendered my eyes sore, so that I became unable to open them wide, and was obliged to keep them half shut. How much more must this be the case with those who dwell on the Alps, where there is a perpetual wind.

"2. The snow, the whiteness of which, when the sun shone upon it, was very troublesome to me. To this the alpine Laplanders are continually exposed.

"3. The fogs. This day I found myself very comfortable in my walk over the icy mountain, till the fog, mist, or cloud, which ever it might be called, came about me, rendering the eyes of my interpreter, as well as my own, so weak and relaxed, that we could not open them wide without an effort. Such must often be the case with the Laplanders.

"4. Smoke. How is it possible that these people should not be blear-eyed, when they are so continually shut up in their huts, where the smoke has no outlet but by the hole in the roof, and consequently fills every body's eyes as it passes!

"5. The severity of the cold in this country must also contribute to the same inconvenience." II. p. 5-7.

In Lulean Lapland he notices some of the remedies used in the cure of diseases.

"Their *Moxa*, as the Japanese call it, but which they term *Toule*, is made of a fine fungus found on the birch, and always chosen from the south side of the tree. Of this they apply a piece as large as a pea, upon the afflicted part, setting fire to it with a twig of birch, and letting it burn gradually away. This is repeated two or three times. It produces a sore that will often keep open for six months afterwards, nor must it be closed till it heals spontaneously. This remedy is used for all aches and pains; as the headache, toothache, pleurisy, pain in the stomach, lumbago, &c. It is the universal medicine of the Laplanders, and may be called their little physician.

"*Kattie* is a kind of drawing or ripening plaster made in the following manner. The fine loose scaly bark of birch is set on fire, and immediately quenched in water. It is then chewed, in the same manner as when wanted for cementing earthen-ware together, and afterwards mixed with fresh turpentine from the spruce fir, both being kneaded together by the hands, till the mass becomes a black uniform plaster. This has a very emollient quality, and is successfully applied to hard imposthumes, &c., which it brings to maturity without pain in a short time, and promotes their discharge." I. p. 274, 275.

"An ointment for burns is made of fresh cream boiled to a thick consistence, with which the sore is anointed. It removes the pain, and admirably promotes the healing of the ulcer.

"For chilblains, the oil or fat which exudes from toasted reindeer cheese, rubbed upon the part affected, is a sovereign cure. Some persons use dog's fat for the same purpose. The latter is also used for pains in the back, being rubbed in before a fire.

"The drug called castor is one of their great remedies for every disease, and the gall of the bear is another." I. p. 276.

"The people here, who dread their children should be marked with that kind of spot called *Eldmarke*, which resembles a burn, as soon as the umbilical cord is cut, rub some of its blood upon the face, hands, and breasts of the infant, by way of prevention." I. p. 254.

"The Laplanders of Westbothnia give their young children the unripe berries of this shrub (*arbutus uva ursi*,) boiled, by way of a laxative or purge. Ten or twelve are the usual quantity, but the dose varies according to the age of the patient." I. p. 250.

"Lying-in women at this place (Kimi,) are accustomed to drink brandy seasoned with pepper, partly for the sake of its intoxicating quality, by way of a narcotic, and partly to bring on the labour pains. The clergyman's wife told me an infallible method, as she said, to prevent the pains which often follow childbirth. When the woman's first child is born, and the umbilical cord divided, a spoonful of the blood is given her to swallow. This is to be practised at every succeeding labour, and I was assured that each would be rendered more easy, without any after pains." II. p. 147, 148.

But upon the whole, the Laplanders are exceedingly healthy, and Linnæus has assigned what appeared to him the reasons:

1. "The extreme purity of the air, which seemed to give me new life as I inhaled it.

2. "The use of food thoroughly dressed.

3. "Eating their food cold; for they always let their boiled meat cool before they taste it, and do not seize it with avidity as soon as it comes out of the pot*.

4. "The purity of the water.

5. "Tranquillity of mind. They have no contentions, neither are they over and above careful about their affairs, nor addicted to covetousness. Their lives are protracted to extreme old age.

6. "Their never overloading the stomach, while the rustic of other countries eats till he is ready to burst.

7. "Deficiency of spirituous liquors. Of these they rarely taste, and only in such quantities as to be rather beneficial than otherwise.

8. "Their being inured to cold from their infancy renders them hardy.

9. "Probably the quantity of flesh they eat may prolong their lives, as carnivorous animals are longlived." L. p. 334, 335.

The remarkable agility of these diminutive people is frequently noticed with envy by our wearied traveller, and he has inquired into its causes at great length; but for this we must refer to the work itself, Vol. I. p. 325., as we wish to extract what he has said of the diseases of their domestic animals.

"The following are the disorders or inconveniences to which the reindeer are subject.

"When the frost is so intense as to form an impenetrable crust on the surface of the snow, so that the animal cannot break it with his feet, to get at the Lichen on which he feeds, he is frequently starved to death. This misfortune is as dreadful to the Laplanders, as any public or national calamity elsewhere; for, when his reindeer are killed, he must himself either starve to death, beg for his livelihood, or turn thief.

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* "Linnæus's expression is, 'they do not spring upon it with boots and spurs."

"The hoofs of the reindeer are not uncommonly affected with a swelling at the edge where they are attached to the skin, at which part they consequently become ulcerated, and are seldom healed. The creature thus grows lame, and cannot keep up with the herd.

"These animals are sometimes attacked with a *vertigo*, or giddiness in the head, which causes them to run round and round continually. The people assured me, that such of them as run according to the course of the sun may be expected to get the better of the disorder; but those which turn the contrary way, being supposed incurable, are immediately killed. The recovery of the former is thought to be promoted by cutting their ears, so as to cause a great discharge of blood.

"The *Kurbma*, or ulceration caused by the gad-fly, (see Vol. I. p. 280.) takes place every spring, especially in the younger fawns. Such as are brought forth in the summer season are free from this misfortune the ensuing spring, but in the following one many of them lose their lives by it. When come to their full size and strength, the consequences are less fatal; but no reindeer is entirely exempt from the attacks of this pernicious insect.*

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* "Concerning the spots or imperfections in the skins of reindeer, it is certain they originate in the perforations made by insects, probably a species of *Tabanus*, through which those insects introduce their eggs. When the young ones arrive at maturity, they come forth by the same passage, and the wound is closed by a scar. On this subject, lest any one should be misled by authority, or by the writings or reports of others, I shall quote the learned work of Linder on *Syphilis*, p. 11. "Reindeer in Lapland are subject to the small-pox, which in Norland is termed Kormsiuka, as I was informed at Wicksbergensbrun by Zachary Plantin, master of arts." In this the able writer has been totally misled, by a person usually esteemed no less honest than profoundly learned. I cannot however conceive how a man, who values himself upon such a character, should willingly and deliberately propagate a falsehood: He ought on the contrary, rather to aim at correcting it. If the reindeer should even have the small-pox every year, this supposed disease will prove on examination nothing else than the sting of the gad-fly (*Oestrus Tarandi*). Did any man ever advance such an absurdity! Even the Laplanders themselves call the disease *Kurbma* (which is the name of the fly that actually causes it)." I. p. 280, 281.

"The fawns are of a reddish hue the first season, during which they cut their foreteeth. In the autumn they turn blackish, and have fodder given them. They are when young frequently afflicted with a soreness in the mouth, so as to be unable for a while to eat.

"Reindeer are subject to a disease called by the Laplanders *Pekke Kattiata*, accompanied with ulcerations of the flesh, which, however, often heal by a sloughing of the part affected. This is an epidemic disorder. It is believed that if any of the ulcerous part, which is cast off, be swallowed by the animal, in licking his own coat, or that of any other of the herd labouring under this malady, it proves fatal by corroding the viscera.

"The dugs of the female often become chapped or sore, so as to bleed whenever they are milked." II. p. 37—40.

"Every body at Tornea was continually talking to me of a distemper to which their horned cattle are subject, and which kills many of them in the course of the winter, but especially in the spring, when they loose from fifty to a hundred head of cattle almost every year. On walking to examine the meadow into which they were first turned out to grass, I found it a bog or marsh, where the Water Hemlock, *Cicuta aquatica*, (*C. Virosa*, *Sp. Pl.* 366. *Fl. Lapp. n.* 103. *Engl. Bot. t.* 479.) grew in abundance, and had evidently been cropped plentifully by the animals in feeding. It seemed probable therefore, that they eat it most in the spring, when first turned into this pasture: whence it proves so much more extensively fatal than in summer, when perhaps they only pick up a plant here and there. It grows in all the moist meadows which are mown for hay; consequently the cattle take it likewise in their winter food, and therefore perish, more or less, during that time of the year. We learn from Wepfer's experiments, who gave it to various kinds of animals, what violent symptoms it occasions. See his book. Nothing appeared to me so interesting during my visit to Tornea, as to examine into the cause and remedy of this evil. If my ideas be right, the whole might be prevented by employing a woman for a month to eradicate all the *Cicuta;* by which this town, small as it is, might save above two hundred silver dollars. I was informed that the cattle dying from this cause become so infectious, that they cannot be flayed without great danger. The persons employed in that business have their hands greatly swelled by touching the carcase, and several have lost their lives in consequence. The plant in question, therefore, agrees in qualities with the *Œnanthe*, as it does likewise in place of growth and outward appearance, especially in the *pinnæ* of its leaves."*

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* "A few further remarks on the above subject, printed in the *Flora Lapponica*, may be acceptable to the English reader.

"This disease made no regular progress, nor was it communicated by infection from one animal to another. The cows are driven altogether in the spring to feed in a meadow, near the town, to the southwest, on the other side of a creek of the river, in which I was informed the greatest mortality happened. The symptoms differ in different cases; but all the cattle, feeding indiscriminately, are seized with a swelling of the abdomen, attended with convulsions, and die with horrid bellowing, in the space of a few days. No person dares venture to flay the recent carcases, it having been found by experience, that not only the hands, but even the face in consequence of the warm steams from the body, become inflamed and gangrenous, and that death finally ensued.

"I was asked whether this disease was a kind of plague; whether the meadow in question produced any venomous spiders; or whether the yellow-coloured water was poisonous?

"That it was no plague appeared from its not being contagious, and from the spring being its most fatal season. I saw no spiders here, except what are common throughout all Sweden; nor was the yellow sediment of the water any thing more than a common innocent ochre of iron.

"I had scarcely landed from the boat in which I was taken to this meadow, than the *Cicuta* presented itself before me, and explained the cause of all this destruction. It is most abundant in the meadow where the cattle are first seized with the distemper, especially near the shore. The slightest observation teaches us that brute animals distinguish, by natural instinct, such plants as are wholesome to them, from such as are poisonous. The cattle therefore do not eat this hemlock in summer or autumn; whence few of them perish at those seasons, and such only as devour the herb in question incautiously, or from an inordinate appetite. But when they are first turned out in the spring, partly from their eagerness for fresh herbage, partly from their long fasting and starvation, they seize with avidity whatever comes within their reach. The herbage is then but short, and insufficient to satisfy them; probably also it is in general more succulent, immersed under water, and scarcely perceptibly scented; so that they are unable to distinguish the wholesome from the pernicious kinds. I remarked every where that the radical leaves only were cropped, no others; which confirmed what I have asserted. In a neighbouring meadow I saw this same plant cut with the hay for winter food; so that it is no wonder if in that state some, even of the more cautious cattle, are destroyed by it." *Fl. Lapp. ed.* 2. 76.

[From the London Medical and Physical Journal for May, 1812.]

Cure from the Bite of the Snake, Coluber Naga, Fort St. George, Madras.—I am induced to give the following history of the situation of a Sepoy bit by a Coluber Naga, as I think it may be useful in showing how much is within the power of early assistance to preserve life in all cases where the bite of that dangerous snake may be on the extremities, and when on any other part of the body, that the farther progress of danger will be arrested, if the part bit is cut out while there is a chance of recovery.

On the 30th ultimo, in the afternoon, Syed Mahomet, a Sepoy, about 38 years of age, one of the guard at Mr. Cassamajor's house, was brought to me with two ligatures drawn tight round his arm, one near the shoulder, the other a little above the elbow; he told me he had been bit by a Cobra Capello in the outer part of his left hand between the little finger and the wrist, where a small wound appeared, from which a little blood oozed; that he was asleep at the time, but was instantly roused by an acute pain, darting up his arm; the Sepoys on guard immediately applied the two ligatures I have mentioned, and being shown the broken part of the wall near to which their companion was bit, they searched and found a Cobra Capello, which they killed and brought to me; it was a half-grown Coluber Naga, between three and four feet long.

More than half an hour from the accident had elapsed before I saw him; he then laboured under extreme pain in the whole hand and forearm to a little above the elbow, where the first ligature was applied, From so much time having elapsed, which would have proved fatal had not the ligatures been applied, I was doubtful of success, from the poison having extended its influence so far; but as there was no other affection of the body, except what was raised by the acute pain from the fingers to below the second ligature, I was induced to cut out the piece bit at even this late period, and immediately immersed the whole left arm in warm water; the wound bled freely, and as he felt relief by compressing the arm with both hands, and compressing it always from the elbow to the wrist, this was continued in warm water for above half an hour, when I had the gratification to find that the acute pain had descended to near the wound; I then ventured to remove the two ligatures on the arm, and continued the immersion in warm water for above half an hour longer, without any tendency to ascension of pain; I therefore gave him two glasses of brandy in water, and sixty drops of laudanum, to relieve him from a sense of bulk and weight in his hand, more distressing than acute pain, and causing a tendency to syncope; ordered a large poultice to the hand, and I desired him to inform me if any acute pain should again dart up from the wound, or further than the elbow. There was then no tension or swelling except a little on the back of the hand; but the uneasy sensation I have mentioned continued in the evening, and which I did not expect would subside for some time.

31st.—Slept none all night, from a throbbing lancinating pain all over his hand and forearm up to where the lowest ligature was applied, the whole swelled and tense, with a considerable increase of heat—ordered the poultices to the wound to be frequently repeated; he slept a little in the day-time, and ate victuals. Afternoon—As the swelling, tension, and heat, of the forearm and hand had considerably increased, with the lancinating throbbing pain up to the elbow, accompanied with quick full pulse, severe head-ache, and other febrile symptoms, which seemed to threaten a serious termination if a check was not put to the progress of rapid inflammatory action—with this view ten leeches were applied where there was greatest pain, and the bleeding from their bites encouraged by fomentation; considerable relief was thus obtained, and a complete intermission from fever took place in the evening—gave him some brandy and water, as he complained of weakness.

1st April.—No tension now on the forearm, swelling diminished, but there is still a lancinating throbbing pain to a little above the elbow where the first ligature was applied; he had a recurrence of fever about midnight, a very short cold stage, a hot fit for about four hours, and profuse sweating for about an hour longer; a complete intermission then took place, and the fever in a similar form again recurred to-day at noon.

For the relief of pain five more leeches were applied, and with success; finding the fever of an intermittent nature, though of an universal form, I ordered bark.

3d.—Fever recurred last night, as before, about midnight, but without any sensible cold stage, and ceased with sweating about five in the morning; skin this morning cool, pulse 84, and rather weak—he vomited his bark last night—is hungry and desirous of food—throbbing lancinating pain gone, only a little soreness on the back of the hand and fingers, which are swelled, and the swelling has a firm feel—ordered the bark to be given in brandy and water. Evening, took five drachms of bark, which did not disagree with his stomach—fever however returned about midnight, but of a much shorter duration, and followed by a more profuse perspiration—no sleep from the pain near the elbow, where the second ligature had been applied, and throbbing lancinating pain on the back of the hand and fingers, and particularly the joints, where the firm swelling continues. Some relief obtained by fomentation—took his bark as before—no fever to-day at noon;—as so much benefit had been obtained by leeches, five more were applied, two to the elbow and three to the back of the hand—ordered the bark to be taken till midnight.

4th.—No fever, but he was prevented from sleeping by a throbbing pain in his fingers, stretching up to the back of his hand; his fingers, and particularly their joints, still swelled and hard—ordered more leeches, as nothing seems more effectual in removing the suffusion produced by the action of the poison and the throbbing pain connected with it. The patient at his own request had ten leeches applied to his fingers and knuckles, by which he says the pain in his hand, the only remaining pain, is entirely removed. As he complains of weakness, ordered him some brandy and water.

5th.—No fever or pain; great weakness in the muscles of the hand or forearm, and the wound does not yet put on a healthy suppurating surface. The leeches applied to the forearm have all been in a line from the wound to the elbow, showing the pain there to have been greatest, from the patient having pointed out the places. Sent home as out of danger.

This case I consider interesting, as it shows the action of the poison of the Coluber Naga, where vital parts are not primarily affected; and, as such an opportunity of knowing it but seldom occurs, I have thought proper to give it in detail.

The observations to be drawn I think are, that this man's life was saved by the early application of a ligature, and to the arm, where there being only one bone, a sufficient compression to prevent the further influence of the poison could be made.

2d.—That the excision of the part bit, by a removal of the poison instilled into the wound, prevented any farther action; for at no time was there any distress beyond the ligature above the elbow.

3d.—From the time that had elapsed before excision, and the full influence of the poison as far as the ligature above the elbow admitted, that it is probable the poison of the Coluber Naga is not absorbed into the system, but acts on the nerves; for, if absorption had taken place, its further progress, on the removal of the ligatures, could not have been prevented, and would have proved fatal; and which probably shows the advantage of cutting out the bite at all times.

4th.—From there being no tension or swelling excepting on the back of the hand, and none followed by the application of the two ligatures, the intermediate part of the arm between them, the distress that occurred from swelling, tension, heat, throbbing, and lancinating pain, must all be considered characteristic of the action of the poison, and probably also the form of the fever; the utility of the exhibition of the bark may thus be doubted, the fever ceasing with the cessation of the cause.

5th.—That the inflammatory action induced seems analogous to what occurs in membranous inflammation, and proceeded with that activity as at one time to threaten sphacelus, had not the free application of leeches and abstraction of blood by subsequent fomentations checked the increased excitement: showing strongly the activity and power of even the influence of the poison that had been communicated from the wound, for the poison itself I consider to have been removed by the excision.

(Signed) A. BERRY.

UNIVERSITY OF PENNSYLVANIA.

At a Public Commencement held on the 9th day of April, 1814, the degree of Doctor of Divinity was conferred on the Rev. Frederick Beaseley, Provost of the University; and the Degree of Doctor of Medicine on the following gentlemen.

From Massachusetts.

Thomas Russell.

New-York.

Henry Field,
Andrew Proudfit.

New-Jersey.

Francis H. Brognard,
Samuel Oldden,
William H. Reynale.

Pennsylvania.

Moses B. Smith,
Thomas P. Anthony,
Franklin Bache,
Joseph Blackfan,
John Redman Barnhill,
John Craig Heberton,
George W. Brown,
Frederick A. Muhlenberg,
Henry M'Murtrie,
William Shippen,
John H. Quinn.

Delaware.

James P. Lofland.

Maryland.

Michael Diffenderffer,
William Thomas,
James H. M'Culloh,
Robert Duer,
Charles Campbell,
Edward Spidden.

Virginia.

Charles Carter,
Edmund P. Taylor,
James Blair,

John Upshur,
William M. Alexander,
John W. Johnson,
William H. Hening,
Henry W. Tucker,
John Field,
Andrew Field,
Henry Lewis,
John H. Cutler,
John W. King,
Richard A. Carrington,
William P. Jones,
Reuben Meredith,
Richard May,
John Dove,
Lee Griggs,
John S. Hardaway,
William E. Horner,
Dudley Burwell,
William B. Westmore,
Corbin Braxton,
Samuel G. Fauntleroy.

Kentucky.

Churchill J. Blackburn,
Daniel Caldwell,
James R. M'Conochie.

North-Carolina.

Carter Edmunds.

South Carolina.

Charles Rutledge,
Charles Lee Edwards,
Alexander S. Moore,
John M'Caa,
William Langley, Jun.
Charles M. Reese.

Georgia.

John A. Casey,
John Dent.

St. Croix.

Baron Frederick Von Bretton.

FOR THE ECLECTIC REPERTORY.

Statement of Deaths, with the diseases and ages, in the City and Liberties of Philadelphia, from the 1st of January 1813, to the 1st of January 1814.

DISEASES.	Under 1 year	From 1 to 2	From 2 to 5	From 5 to 10	From 10 to 20	From 20 to 30	From 30 to 40	From 40 to 50	From 50 to 60	From 60 to 70	From 70 to 80	From 80 to 90	From 90 to 100	From 100 to 110	From 110 to 120	Total
Abortion -	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Asthma - - - -	0	0	0	1	0	1	3	3	0	2	3	0	0	0	0	13
Abscess - - - -	0	1	0	0	0	1	0	1	1	1	0	0	0	0	0	5
Aneurism - - - -	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Apoplexy - - - -	1	0	0	0	2	4	7	5	3	5	2	0	0	0	0	29
Atrophy - - - -	3	0	4	0	1	0	3	2	1	2	1	1	0	0	0	18
Burns - - - -	3	1	1	0	0	0	0	0	1	0	0	0	0	0	0	6
Cancer - - - -	0	0	1	0	0	0	2	0	1	2	0	1	0	0	1	8
Casualties - - - -	0	1	1	0	0	3	2	0	0	2	0	0	0	0	0	9
Catarrh - - - -	1	0	0	0	1	0	3	1	0	0	0	0	0	0	0	6
Child Bed - - -	0	0	0	0	0	3	0	1	0	0	0	0	0	0	0	4
Cholera Morbus -	107	51	12	1	2	1	1	1	1	0	0	1	0	0	0	178
Cholic - - - - -	2	0	0	0	1	1	0	0	1	0	0	0	0	0	0	5
Consumption of the Lungs	7	2	2	3	3	12	58	55	37	19	7	11	0	0	0	216
Convulsions - - -	115	15	21	4	2	2	3	2	1	0	1	0	0	0	0	166
Caries - - - - -	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Decay - - - - -	9	2	3	1	1	4	12	5	5	4	5	3	0	0	0	54
Diarrhoea - - - -	7	3	5	2	0	2	2	2	2	3	3	0	0	0	0	31
Dropsy - - - -	1	0	2	2	1	3	6	7	6	7	2	5	0	0	0	42
of the Breast - -	3	0	1	2	0	1	2	2	4	3	0	0	0	0	0	18
in the Brain - -	17	11	7	0	2	0	0	1	0	0	0	0	0	0	0	38
Drowned - - - -	1	0	1	5	2	1	1	1	4	0	0	0	0	0	0	16
Diabetes - - - -	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Dysentery - - -	8	3	12	11	8	7	6	3	5	2	4	0	0	0	0	69
Drunkenness - -	0	0	0	0	0	2	0	1	0	0	0	0	0	0	0	3
Disease in hip joint	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2
Debility - - - -	5	3	1	0	3	2	5	6	3	7	4	3	0	0	0	42
Epilepsy - - - -	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	3
Erysipelas - - -	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2
Eruptions - - - -	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Fracture - - - -	0	0	0	0	2	0	0	1	0	1	0	0	0	0	0	4
Fever - - - - -	6	4	5	3	3	2	8	5	1	3	0	1	0	0	0	41
Intermittent - -	0	0	2	0	0	0	1	0	2	0	1	0	0	0	0	6
Remittent - - -	1	1	1	1	2	0	0	3	0	0	3	0	0	0	0	12
Bilious - - - -	1	0	0	1	1	6	0	3	2	3	0	1	0	0	0	18
Nervous - - -	0	0	0	0	0	1	1	1	2	0	0	0	0	0	0	5
Malignant - - -	0	0	0	1	1	0	2	2	0	0	0	0	0	0	0	6
Typhus - - -	2	3	5	4	10	19	22	14	9	9	4	1	0	0	0	102
Puerperal - - -	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2
Hectic - - - -	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Inflammatory - -	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Mortification and Gangrene	2	0	0	1	0	0	1	2	1	0	3	0	0	0	0	10
Gout - - - - -	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	3
Gravel - - - - -	1	0	0	1	1	1	0	0	1	0	0	0	0	0	0	5
Carried over,	305	102	78	47	51	84	152	129	95	78	44	28	0	0	1	1204

DISEASES.	Under 1 year	From 1 to 2	From 2 to 5	From 5 to 10	From 10 to 20	From 20 to 30	From 30 to 40	From 40 to 50	From 50 to 60	From 60 to 70	From 70 to 80	From 80 to 90	From 90 to 100	From 100 to 110	From 110 to 120	Total
Brought forward,	305	102	78	47	51	84	152	129	95	78	44	28	0	0	1	1204
Hooping Cough - -	9	8	9	3	0	0	0	0	0	0	0	0	0	0	0	29
Hives - - - - -	10	8	13	3	0	0	0	0	0	0	0	0	0	0	0	34
Hernia - - - - -	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Hæmorrhage - - -	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	2
Hydrophobia - - -	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Inflammation of the Brain	1	1	0	1	1	1	3	0	0	0	0	0	0	0	0	8
of the Lungs - -	2	2	1	0	1	1	1	3	1	0	0	0	0	0	0	12
of the Stomach -	7	3	4	0	3	3	1	2	2	1	0	0	0	0	0	26
of the Bowels - -	7	4	2	3	0	3	2	2	0	3	2	0	0	0	0	28
of the Liver - -	2	3	1	2	0	0	2	1	5	1	1	0	0	0	0	18
Insanity - - - -	0	0	0	0	0	5	10	5	1	2	2	0	0	0	0	25
Jaundice - - - -	0	0	0	1	0	0	1	0	1	0	0	0	0	0	0	3
Locked Jaw - - -	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
Measles - - - -	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Murdered - - -	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Old Age - - - -	0	0	0	0	0	0	0	0	0	0	7	19	6	1	0	33
Pleurisy - - - -	5	1	4	1	1	8	8	5	7	10	3	1	0	0	0	49
Palsy - - - - -	0	0	0	0	0	1	1	2	1	1	4	1	0	0	0	14
Rheumatism - - -	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	4
Rupture - - - -	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Scrofula - - - -	2	2	0	1	2	0	0	0	0	1	0	0	0	0	0	8
Sore Throat - - -	5	3	4	0	0	0	0	1	1	1	0	0	0	0	0	15
Still Born - - - -	66	0	0	0	0	0	0	0	0	0	0	0	0	0	0	66
Suicide - - - -	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Sudden - - - -	2	0	1	0	0	0	1	5	4	1	3	1	1	0	0	19
Spina Bifida - - -	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Syphilis - - - -	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Strangury - - -	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	3
Teething - - - -	4	4	0	1	0	0	0	0	0	0	0	0	0	0	0	9
Ulcers - - - - -	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Wounds - - - -	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Worms - - - -	3	3	1	1	0	0	0	0	0	0	0	0	0	0	0	8
Unknown - - - -	1	0	1	0	0	3	1	0	0	1	0	0	0	0	0	7
Total,	431	144	130	64	62	107	186	158	190	102	68	51	7	1	1	1632

NOTE. Of the above there were 521 males of twenty years and upwards, 308 under twenty years: of females 322, of twenty years and upwards, 388 under twenty years; and 93 children, principally under one year, whose sex is unknown. It also appears that there were interred in the Public Burial Ground 659, which added to the above will give a grand Total of 2291.

Deaths in each month of the above period.

	Adults.	Children.	*Total.*		Adults.	Children.	*Total.*
January - - -	77	52	129	October - -	66	45	111
February - - -	54	28	82	November - -	57	39	96
March - - - -	70	59	129	December - -	61	54	115
April - - - - -	93	59	152				
May - - - - -	82	38	120	*Total* - - - -	844	788	1632
June - - - -	60	58	118				
July - - - -	54	114	168				
August - - -	85	148	233				
September - -	85	94	179				

By order of the Board of Health,

JOHN ALLISON, Clerk.

Health Office, February 1st, 1814.

HUMANE SOCIETY.

At the general meeting of the Members of the Humane Society of Philadelphia, held on the 2d instant, agreeably to their Act of Incorporation, and to public notice, the following persons were duly elected Managers, for the present year, viz.

Joseph Crukshank,	Samuel Pancoast, jun.
Charles Marshall,	William Leedom,
Benjamin Thaw,	Matthew L. Bevan,
Dr. Thomas C. James,	John Bacon,
Dr. Joseph Parrish,	William Hembel, jun.
Dr. John Moore,	Isaac Snowden.

And at a meeting of the Managers, this day, the following officers were chosen:—

Joseph Crukshank, *President.*
Joseph P. Hornor, *Treasurer.*
Isaac Snowden, *Secretary.*

Inspectors of the Apparatus.

William Leedom,
John Bacon.

Committee of Correspondence.

Dr. Thomas C. James,
Dr. Joseph Parrish,
Dr. John Moore.

March 9, 1814.

DOCTOR CURRIE of Philadelphia, proposes to publish, in the course of the ensuing summer, A Synopsis, or general view of the most noted theories or doctrines of diseases that have been taught at different periods to the present time, with an attempt to establish a more correct and satisfactory Theory of Fever, than any that has hitherto appeared.

A Volume of Desault's Surgery, on the Diseases of the Bones, was sometime since published in this city. We were much gratified to find that two more Volumes of the works of this justly celebrated Surgeon, have lately been published under the following title:—The Surgical Works, or statement of the Doctrine and Practice of P. J. Desault, Surgeon in Chief of the Great Hospital of Humanity, at Paris; by Xavier Bichat, his pupil, adjunct Physician of the same Hospital. In two volumes. Diseases of the Soft Parts. Translated from the original, by Edward Darrell Smith, M. D. Professor of Chemistry, &c. in the South-Carolina College. Philadelphia, published by Thomas Dobson. 1814.

THE

ECLECTIC REPERTORY

AND

ANALYTICAL REVIEW.

Vol. IV. JULY, 1814. No. IV.

SELECTED PAPERS.

Facts and Observations respecting Intermittent Fevers, and the Exhalations which occasion them. By Sir Gilbert Blane, Bart. M.D. F. R. S. Physician in ordinary to the Prince Regent.

[From the Medico-Chirurgical Transactions, Vol. III.]

HAVING been sent by the government of this country on a special mission to the Island of Walcheren, in the autumn of the year 1809, in order to ascertain the nature and causes of the great sickness and mortality prevailing in the British army in Zealand, and to make a report of my enquiries: having been also sent by the Admiralty to Northfleet, in the autumn of 1810, in order to investigate the nature and situation of that spot in point of health, with a view to decide, whether any objection in point of unhealthfulness would arise to the formation of a projected dock-yard, and other naval establishments at that place, some observations have occurred to me in executing these duties, which appeared to me sufficiently interesting to be laid before this Society.

During my residence in Walcheren, I not only visited all the hospitals, but inspected, with the permission of the Commander in Chief, the whole returns of the army from the time of their disembarkation, in order to ascertain the progress and extent of the sickness and mortality. The result of these enquiries is what I now propose to communicate, and, in describing the nature, and detailing the ravages of the prevailing disorder, I shall borrow the greater part of what I have to say, from my official communications.

I arrived in the island on the 30th of September, and remained till the 13th of October following. During my stay I stated to the government, that I found so great a proportion of the sick to consist of those affected with the intermitting and remitting fevers peculiar to marshy countries, that there could be no doubt that the sickness of the army was owing to that cause.

The fever commonly called typhus, with which armies in ordinary circumstances are chiefly affected, had been rare, and dysentery, which, in the history of former campaigns* in the Low Countries, proved so severe a scourge to our armies in the autumnal months, had been as yet but little felt. Both these diseases, however, had begun to show themselves at Flushing, where the accommodations were at best far inferior to those at Middleburgh; but were then still more so, in consequence of most of the buildings having been injured by the shot and shells thrown into the town during the siege. In the large and elegant city of Middleburgh, the accommodations were excellent, as we had not only the advantage of the hospitals formerly belonging to the Dutch and French troops, but the spacious and airy warehouses of the Dutch East India Company: this having been formerly the great emporium of Indian commerce. Here I found no typhus nor dysentery, but the prevalence of these two diseases was very remarkable at Flushing, particularly in one regiment, of which all the medical officers were either absent or dead, and of which the sick, originally affected with the endemic disease, were suffering also from typhus and dysentery, in consequence of the want of cleanliness as well as of proper medicines, diet and attendance. This fact affords a proof of the necessity of general hospitals on actual service, as well to prevent the generation and extension of infection, as to afford relief to the regimental establishments, when the sick and wounded accumulate beyond their means of accommodation. It is evident in the present instance, how necessary this is even in stationary service; but with regard to the ordinary service of a campaign, where armies are in motion, and where regimental surgeons and their assistants must be present with the regiments, general hospitals may be regarded as absolutely indispensable. There ought also to be a liberal establishment of medical officers attached to such hospitals in case of emergencies of service, and to fill up such casual vacancies as may occur in regiments.

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* See Sir J. Pringle's Work on the diseases of the army; in which there is a most accurate history of the diseases prevailing in the British armies in Zealand and other parts of the Low Countries.

I found myself under the painful necessity, therefore, of stating, that the sickness on this island did not diminish. It appeared from the latest general weekly return, that there were two thirds of the whole numeral strength of the army incapable of duty. The mortality during the last four weeks had been about 1000. All the battalions were affected nearly in an equal degree; and it does not appear, that their illness was connected with the nature of their duty, or that it was owing to privations or neglect of any kind; for those were equally sickly, who had enjoyed the utmost ease and comfort in cantonments, as those who had been engaged in the siege of Flushing.

Nor was this great sickness imputable to any thing unfavourable in the weather at this season, in comparison of former years. On the contrary, the native inhabitants affirmed, that they were then less sickly than usual at the same season of the year, and they accounted for this, from the uncommon quantity of rain that had fallen the last two months: for they consider it as fully established by observation, that the most sickly years are those, in which there had been great drought and heat in the latter end of summer and the early part of autumn; owing, probably, to the increased exhalation, and the more concentrated foulness of the stagnant water produced by these causes.

I found upon enquiry, that a like degree of sickness prevailed among the French troops who occupied Flushing during the last seven years; and that in former times, the Dutch troops, from the northern parts of the United Provinces, suffered equally. As the army had not suffered either from the scantiness and bad quality of provisions, nor from want of proper accommodation, nor from hardships and fatigue, it admits of no doubt, that the unfortunate state of the army here, was solely imputable to the contamination of the air from a soil the most productive of deleterious exhalations of any perhaps in Europe, producing an endemic fever which has at all times been particularly severe upon strangers in the autumnal months. I find also upon enquiry, that though this is by far the most sickly season, the residents of this and the neighbouring islands do not enjoy, at any season, the same degree of health as the inhabitants of the more salubrious parts of Europe.

From this statement, it will be clearly perceived, how much the causes of sickness were out of the reach of human control. There were two facts, however, which afforded some encouragement for the employment of artificial means, in counteracting the overpowering influence of natural causes. One was, that those belonging to the upper orders of society in Walcheren were always less affected with its endemic fevers than the poorer inhabitants: the other, that the British officers suffered less in this campaign, than the private men, as will be seen by an abstract of the returns. As this latter must be owing to some circumstances of superior accommodation and diet, there was encouragement to attempt some improvement in these respects, though the situation of the common soldier was as comfortable as belongs to his condition. With this view I suggested the use of stoves in the barracks as well as in the hospitals, in order to promote the dryness, warmth, and purity of the air. I also represented, that considerable benefit might arise from the men being supplied with a hot breakfast. It may likewise be remarked, that those who slept in the upper stories of houses, were less liable to the disease, and had it in a milder form, than those who slept on the ground floors. The testimony of the natives is in favour of this observation. We had a striking confirmation of it in the visit we paid to the party accommodated at Fort Rammekins. To the observation of General Monnet (the French general who commanded during the siege) with respect to the good effect of a small quantity of ardent spirits in the morning, I may add a recommendation of mixing pepper freely with the broth and other articles of food.

There were, in the beginning of October, when I arrived, considerably more than one half of the army sick, or convalescent in hospitals. This amount was not owing merely to the numbers accruing from those who were daily taken ill, but was swelled in consequence of the small number of discharges, and the numbers of convalescents waiting for a passage to England; for under the influence of the endemial air, recoveries were slow and imperfect, and relapses very frequent, not only among the few who were discharged, but among the convalescents at the hospital, some of whom, when apparently in a fair way of doing well, would unaccountably drop down dead. This made me urge the conveyance of such subjects to England, with as little delay as possible. There were then 6000 subjects proper for being transported to England; and I recommended, in conjunction with Dr. Macgregor, the superintendant of the military hospitals, that line of battle ships, with their lower deck guns taken out, should be sent from England for this purpose, there being at Walcheren only the means of conveyance for 1000 men. This measure was rendered further necessary, by the rapid accumulation of sick in the hospitals, some of which were already over-crowded, and, if not relieved, must in themselves have proved a source of additional sickness and infection.

One of the most important circumstances in the operation of marsh miasma on the human body is the power of habit in mitigating its influence. The natives are not a robust people; they are of a very wan and sickly hue, and have all suffered more or less from the bad air which they breathe. The children of both sexes are very subject to glandular and abdominal complaints; and the adults, particularly those of the lower orders, have all of them, some time or other in the course of their lives, laboured under the endemic intermittent. They are, however, infinitely less subject to intermittent fevers than strangers. It was curious to remark, in conversing with the natives, even persons of education, and medical practitioners, that they would not admit their country to be more unhealthy than any other; and when they were asked to account for the great sickness prevailing among our troops, they mentioned some frivolous circumstance in diet and habits of life, but would allow nothing to be ascribed to the insalubrity of the air. However unfounded this prejudice may be, it is strongly expressive of the great difference in point of health between natives and strangers. These strangers are also variously affected according to the district from which they come. It was found, that of the British troops, the natives of mountainous countries, and dry soils, were more frequently affected than the natives of flat and moist districts. It is also well ascertained, that strangers, if they survive the first attacks, become thereafter much less liable to the endemic intermittents. This was well proved and illustrated in a *Memoire* which was discovered in the house of the French general Monnet.*

It was there recommended that troops should not be frequently changed; for when it was the custom to send battalions from Bergen op Zoom, every fourth night, in succession, to work on the lines of Flushing, these men never failed, on their return, to be taken ill in great numbers. General Monnet therefore advised, however displeasing it might be to officers, that a stationary garrison should be retained in Walcheren, in order that it might be habituated to the air, (*acclimaté*), and he instanced a French regiment, which suffered in the second year of its being stationed there only one half the sickness and mortality which it suffered the first year, and hardly suffered at all the third. There were some other important remarks in the *Memoire*, such as, that when it might be necessary to reinforce the garrison, this should be done early in winter, in order that the men might be habituated to the climate before the return of the sickly months, which he reckoned to be June, July, August and September. He also recommended, that men who mount guard or who are employed in any other duty exposing them to cold damp or fatigue, should have a double ration of spirits (genievre,) and that there should be an additional allowance of this, and also of vinegar, during the sickly months. Another remark of this general was very consolatory to us at this time, namely, that the oldest inhabitant did not remember a year, in which this endemic had not disappeared before the end of October.

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* General Monnet was an able man, and had commanded at Flushing during the whole seven years in which the French had possession of that place. We may therefore admit the authority of his judgment and experience.

The expedition to Zealand sailed from the Downs on the 28th of July, and made good their landing on Walcheren, and North and South Beveland, on the 31st of July and the 1st of August. The only military operation of consequence was the siege of Flushing, which was invested on the 1st of August, and capitulated on the 15th of the same month. In the beginning of September, the islands of North and South Beveland were evacuated, and that part of the army which occupied them, returned to England; about 18,000 being left to garrison Walcheren. More than one half of these died, or were sent to England on account of sickness in the course of the three following months; and the island was finally evacuated on the 23d of December of that year.

The following Tables exhibit a view of the course of the sickness and mortality. I was enabled to bring them down to the end of the campaign, the Commander in Chief having obligingly allowed me to extract from the returns deposited at the War Office, what was wanting in the notes which I had taken in Zealand.

I am also enabled to state, on the authority of Dr. Bancroft,* and Mr. Keate the surgeon-general, that the whole

* Essay on the Yellow Fever, page 303.

number of sick sent to hospitals in Zealand, between the 21st of August and the 18th of November, 1809, amounted to 26,846, including relapses; and that the number of sick, including a small number of wounded conveyed from thence to England, between the 21st of August and 16th of December, amounted to 12,863; and that many instances occurred in those who returned to England apparently in health, in whom the endemial disease of Zealand appeared after the slight fatigue of a march.

Account of the Sickness and Mortality of the Army, in the Islands of Zealand, abstracted from the Monthly Returns, 25th August, 1809, and the three subsequent Months.

HEAD QUARTERS, FORT BATHZ, SOUTH BEVELAND.

DATE of the Monthly Return.	TOTAL.		SICK.			DIED.	
	Rank and File and Non-Commissioned Officers.	Commissioned Officers.	In Quarters.	In Hospitals.	Total.	Rank and File and Non-Commissioned Officers.	Officers.
25 Aug. 1809.	41642	1879	988	1713	2701	* 114	† 7

HEAD QUARTERS, MIDDLEBURGH, IN WALCHEREN.

DATE of the Monthly Returns.	TOTAL.		SICK.			DIED.	
	Rank and File and Non-Commissioned Officers.	Commissioned Officers.	In Quarters.	In Hospitals.	Total.	Rank and File and Non-Commissioned Officers.	Officers.
25 Sep. 1809.	16931	723	3829	5000	8829	883	29
35 Oct.	11921	611	2845	3027	5872	760	9
25 Nov.	6297	452	469	624	1093	196	3

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* In this number 100 who were killed and died of wounds are included, so that only 14 died of disease.

† Of these one was killed as above, and 6 died of wounds, so that none died of disease.

Account of the Sickness and Mortality in the Island of Walcheren, abstracted from the Weekly Returns, dated the 10*th September, and the twelve subsequent Weeks.*

DATE of the Weekly Return.	Rank and File and Non-Commissioned Officers.			Officers.		
	Total.	Sick.	Died.	Total.	Sick.	Died.
10 September	17870	6931	221	770	No ret.	4
17	17410	8141	277	765	235	7
24	16409	8754	287	782	191	3
1 October	16156	9127	254	748	172	2
8	15276	8969	217	719	168	3
16	—	—	Return	mislaid	—	
23	13017	7145	128	655	113	
31	11747	6228	121	292	80	1
7 November	—	—	Return	mislaid	—	
14	8868	3799	40	559	45	
21	7926	1226	36	543	47	
29	6261	1158	30	383	30	

The first circumstance which strikes the eye on inspecting these Tables, is the smallness of the mortality in the first month of service. It not only proves, that several weeks are necessary for these deleterious exhalations to act upon the system, so as to produce disease, but that the rate of this mortality is so much less than in ordinary circumstances, as to stagger one's belief. According to the statement here exhibited, only 14 died of disease in 41462 in a calendar month, and not one officer. I at first distrusted my own accuracy in making the abstract; but repeated examination convinced me that I was correct. I next distrusted the accuracy of the returns, but the adjutant-general assured me that there was not the smallest reason to suspect an error. According to the population returns of 1801, the smallest degree of mortality in any of the counties of England and Wales, was in Pembrokeshire; and was 1 in 76. The greatest mortality was in London; and was 1 in 31. But it is not fair to compare the mortality of an army, with that of the general population; for the latter includes all ages, sexes, and constitutions, whereas the former consists of the robust part of the male sex, in the prime of life. The computation being made on the like class, it would appear, that there is a considerably smaller rate of mortality than in people of the same age in England; for according to Simpson's tables, the mortality here in men and women from 20 to 45 is at the rate of one in 50 annually; but the annual rate of it in this army, if computed by the month ending the 26th of August, would be only 1 in 248.

This low rate of mortality will appear in a still more striking point of view, when compared with that of fleets and armies elsewhere: for at Coxheath in the year 1779*, the annual mortality was at the rate of 1 to 109; and during the time in which I kept records of the fleet in the West Indies, the lowest in any month, April 1782, was equal to an annual mortality of 1 in 72; and the actual annual mortality about that time in the army was 1 in 4, and in some particular spots more than one half.

Was this small rate of mortality in Zealand at this period, owing to the superior health and strength of those men who compose an army above the persons of both sexes, on whom the calculation is made in civil society? Or is it owing to this, that in the beginning of an expedition men's minds are in that elated state, from the sanguine hopes of victory and success, which is favorable to health? I have remarked elsewhere†, that in fleets, impressions of this kind have a striking effect on the health of men. Probably both the abovementioned circumstances had a share in keeping down the mortality at this period. This however was of short duration; for it will be seen by the Table, that the sick had begun to increase rapidly at this time; and that before the 10th of September, the mortality had become very great. As there is no account in these Tables, of the numbers taken ill in the intermediate times, nor of those discharged cured; nor any accurate statement of the number sent to England from time to time, we have no scale of the decreasing sickness, as the season changed, except the weekly diminution of the number of effective men. Thus it will appear by a calculation made on Table 2d, that in the week between the 17th and 24th of September, the effective force was reduced from 9269 to 7655, so that 1 in 5.7 that is, about 2 in 11, had in that time become unfit for duty. It will appear by a like calculation, that on the 23d of October, the effective force was reduced to 5872; and that in the course of the succeeding week, it was reduced to 5519; so that 353 had in that time become unfit for duty, that is, 1 in 1.094, or about 1 in 11. By this rule, the sickness was diminished by one half in the course of a few weeks, making allowance for the greater number that will be taken ill at the beginning of a campaign: for the most susceptible will necessarily first fall ill. No fair judgment can be formed from the returns of November, for reinforcements, of the amount of which I am uninformed, arrived from England in the course of that month to assist in the evacuation of the island. From all the evidence, however, I could procure, the number of seizures continued to diminish as the winter advanced, conformably to what we had been told by the natives.

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* See Blane's Observations on the Diseases of Seamen, page 170. Third Edition.

† Ibid. page 77.

The Island of Walcheren is 13 miles long from east to west, and 9 miles from north to south. The capital of this island and of all Zealand is Middleburgh, an open town in the centre of the island, but communicating with the sea by a broad and deep canal, continued from a natural navigable inlet, leading to Rammekens, on the south-east quarter of the island. Flushing on the south side of the island is the principal sea-port and arsenal, and the only place of strength. The whole island, with the exception of some hills, or rather mounds of sand on the western shore, is a dead flat, below the level of the sea at high water and preserved from inundation by dykes. The soil consists of a fine white sand known in the eastern counties of England by the name of silt, and about a third part of clay. It is divided into small square inclosures, by ditches, which serve as drains; and these were about two thirds full of turbid water when I was there. They emit no smell, that I could perceive; but I was sensible of a bad smell proceeding from some ponds of stagnating water. The soil seems to be a mass of alluvial matter like Deltas of great rivers; and the whole islands of Zealand seem to have been formed by the *detritus* carried down by the Rhine and Scheldt, and forming accumulations for a long series of ages. There is a poison in the exhalations from such soils, the nature of which is entirely unknown. It is not animal putrefaction; for it is perfectly well ascertained, that those who are exposed to putrid vapours, such as anatomists and tanners, are not affected by complaints of this kind; nor indeed by any complaint, unless these vapours are very concentrated; and the disease in that case is not an intermittent fever. Water in a state of stagnation, without any ascertainable principle of contamination, seems to generate these exhalations. It is only from the absence of stagnation, that we can account for the Delta of the Nile not producing the same disease as Zealand. This is so far from being the case, that Lower Egypt is one of the most healthful countries in the world, and is not infested with endemic intermittents. This remark did not escape the geographer* Strabo; and he assigns as the cause, that the stagnation of the water was prevented by the annual inundation of the Nile. It appears also, from a work of Dr. Macgregor, that intermittent fevers, though not unknown, are not endemic in Egypt†. On the other hand we know from the medical history of Minorca‡, that, though this island consists of a rocky bottom, and very thin soil, yet in consequence of some stagnant water in channels and pools, severe intermittents are very common. I need hardly mention, that the plague is no exception, this being a disease depending on *human* effluvia, and entirely unconnected with the nature of the soil.

An intelligent general officer on the expedition to Egypt in the year 1800, who had served in all climates, assured me, that he had nowhere seen so little sickness and mortality from disease; for sickness, even including the plague, was less destructive than in any other country in which he had served; so that there was here an exception to a rule which holds everywhere else, that disease is more fatal than the sword; for more were killed, or died by wounds, than by sickness, including even those who died of the plague. Nor can it be alleged, that humidity alone may have the effect of producing intermittent fevers; for the vapour of pure fresh water, when not in a state of long stagnation, is found to be free from any bad effects upon the greater number of constitutions. It is remarkable, that though much greater quantities of rain fall in the western parts of England than in the eastern, the average in some counties of the former being more than double of what it is in those of the latter, yet it does not appear that health is in the least affected by this circumstance; and seamen, even in the thickest fogs on the banks of Newfoundland, for many days together, preserve their health perfectly. This poison, therefore, is some principle, with the nature of which we are still unacquainted. There are also certain species of decayed organic matter, the exhalations from which are not at all productive of agues nor of any other disorder. I allude to bogs or peat mosses. This is fully proved in Scotland, but still more in Ireland, where there are immense tracts of this soil, without any hurtful influence upon health. It might naturally be expected also, that the swamps round Venice would be productive of endemic fevers. This is not the case; and it is probably owing to the water which forms them, being sea-water.

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* Vid. Strabon. Geograph. lib. 17. page 1143, Amstelodam. 1707.

† Vid. Medical Sketches of the Expedition to Egypt from India, by James Macgregor, M. D., page 99 and 163. London 1804.

‡ Vid. Cleghorn on the Diseases of Minorca.

The *miasmata* in Zealand, are more noxious than the like exhalations in England; the intermittents in the former, being more violent, untractable, and fatal, than those which occur in the fenny counties, in the eastern parts of our own country. I estimate this violence, by the high degree of febrile heat and delirium, by the excessive secretion of bile, the want of distinct intermissions, and the more frequent swellings of the liver and spleen; these taking place in the course of a very few weeks, which in England seldom occur but under a long continuance, or from frequent relapses of the disease.

The exhalations of the soil in tropical climates, extend farther, and are still more malignant than those of Zealand. Ships at the distance of 3000 feet from swampy shores, (a distance to which it did not extend in Zealand,) and even farther, were affected by the noxious exhalations, according to my own observations and those of others in the West Indies; and I have been credibly informed of the like fact, with regard to the India ships in the channel which leads to Calcutta. This greater density and malignity of the exhalations, might naturally be expected from the greater intensity of atmospheric heat.

A medical gentleman belonging to the army in St. Lucia, one of the Caribbee Islands, in the year 1781, at which time I was Physician to the fleet on that station, favored me with the following statement, which throws considerable light on the subject here treated of.

" The Fevers in general are of the low kind, terminating in intermittents.

" Unhealthy situations are the causes of many diseases here, particularly the worst sort of fever and intermittents.

" One regiment, viz. the 90th on the Morne Fortunée lost 271 men; the 91st on the side of the hill 318; the 98th in *Grand Cul de Sac* at the bottom 486.

" The hill or morne is above the level of the sea 872 feet."

STATE OF SICKNESS AND MORTALITY IN THE ARMY AT ST. LUCIA.

Strength of the Garrison.	The different Months.	Men in Garrison fit for Duty.	In Genl. Hospitals.				Prevailing Diseases.	Number of Sick.	Monthly Deaths.	In Regtl. Hospitals.				Prevailing Diseases.	Number of Sick.	Monthly Deaths.	Total Sick.	Total Deaths.
			Fevers.	Agues.	Fluxes.	Dropsy.				Fevers.	Agues.	Fluxes.	Dropsy.					
2325	May.	1784	50	14	36	5	Fever.	105	43	61	56	313	6	Flux.	436	16	541	59
1737	June.	1093	57	9	43	4	Do.	113	68	65	56	413	0	Do.	534	68	644	136
*1912	July.	1012	42	8	51	1	Flux.	102	68	105	94	589	10	Do.	798	125	900	193
1989	August.	1084	34	19	83	8	Do.	144	110	127	202	427	5	Do.	761	142	905	252
1582	September.	899	33	29	86	10	Do.	158	101	100	161	261	3	Do.	525	152	683	253
1533	October.	837	27	29	77	5	Do.	138	56	179	183	196	0	Do.	558	156	696	212
1401	November.	801	25	38	64	4	Do.	131	74	87	166	214	2	Do.	469	65	600	139
1286	December.	883	21	28	49	2	Do.	100	54	60	77	164	2	Do.	363	51	403	105
1268	January.	942	11	38	60	1	Do.	110	69	51	70	104	1	Do.	230	32	325	101
†1540	February.	1230	14	20	67	3	Do.	104	41	47	69	104	0	Do.	220	40	310	81
1554	March.	1233	4	12	49	3	Do.	68	82	77	80	93	3	Do.	253	32	321	64
1442	April.	1172	12	21	33	0	Do.	66	15	72	68	71	1	Fever.	212	29	278	44
			Died in the Genl. Hospital - - -						731	Died in Regtl. Hospital - - -						908	Total.	1639

* 46th and 5th Regiments joined.

† 37th Regiment joined.

It is evident that the severity of the symptoms, in the Zealand fever, added greatly to the difficulty of the cure; and there could be no opportunity of employing Peruvian Bark or other specific remedies, till its violence had abated, and the redundant bile had been carried off. The treatment of this acute state, consisted chiefly in giving such remedies as purged freely; and in selecting them, the preference was due to those which acted most readily on the liver and the bile, such as calomel; those which were least heating, as the neutral salts; and such as were best borne by the stomach, which, in a great many cases, was extremely irritable. In the course of the general inspection, in which my duty consisted at this time, I had not myself an opportunity of directing and watching the practical details of individual cases; but I had considerable experience in this way, in my attendance on officers in England, who either brought the complaint with them, or were seized on the passage, or after their return to this country.

One of the medical controversies respecting the cause of intermittents, is founded on the difference of opinion on the question, how far the excess of bile may be considered as the cause of them. It certainly cannot, in correct language, be called the cause; otherwise every case of redundant bile, such as the *cholera morbus*, would be attended or followed by an ague. Certain it is, however, that epidemic intermittents not only occur exclusively in those seasons in which an excessive secretion of bile is most apt to arise, but every attack, whether original or relapsed, which I have seen, bore evident marks of an excessive flow of this humour. The true statement of the fact perhaps is, that that state of the body, in which there is the strongest tendency to a copious secretion of bile, either from the natural constitution, or the season of the year, constitutes a predisposition favourable to the action of the poisonous exhalations. There seems in this something analogous to other facts mentioned in a former paper respecting the Plague and the Yellow Fever, namely, that the human body is not liable to be affected by them, unless when predisposed by a certain temperature of the atmosphere. If the attack of this disease depended merely on the quantity of the exhalations, they would be most frequent in June and July, when the heat of the atmosphere is highest. But there is a still more decisive proof of its depending on that season, in which the secretion of bile is most copious, from this fact, that when those who have imbibed the poison, are transported into countries where the air is in a state of greatest purity, it is in the autumnal months, that they are most commonly attacked. There was a very striking proof of this after the campaign of North Holland in 1779. In the following year some of the officers and men who had escaped the disease, were taken ill in the autumnal months; and none that I heard of, at any other season of the year.

The greatest difficulties which occurred in the cure of those severe intermittents in their early stages, proceeded from the great irritability of stomach, which rendered it very difficult to exhibit either purgatives with a view to procure intermissions, or bark in sufficient quantity after intermissions had been procured. The best means, I found, of obviating the first difficulty, was to purge with calomel; which, besides the advantage already mentioned, is, on account of its small bulk, swallowed without repugnance, and, by its weight, is not easily rejected after being swallowed; and in case the stomach rejected neutral salts, to assist its operation by considerable quantities of carbonated magnesia given in effervescence with lemon juice. It is sometimes advisable to give mercury as an alterative. Ramazini* relates, that a person affected with an obstinate ague was cured by mercurial friction administered for the lues venerea. The second difficulty was obviated by substituting opium and arsenic for bark. The stomachs of some patients were reconciled to the bark, by administering it with opium or magnesia in effervescence, or both; to others it was so insuperably offensive, that it could not be borne in any form, quantity, or combination. In these cases, the cure was effected by opium and arsenic, along with such bitters and aromatics, as the stomach would bear. Where the periodical paroxysms had not ceased, the tincture of opium was given from 30 to 50 drops, in the intermission, a few hours before the expected hour of seizure, accompanied with as much rhubarb as would counteract its restringent effects. Sometimes the first administration of this stopped the paroxysm; but more commonly only alleviated it, and did not stop it till the second or third time. After the paroxysms were stopped, it was continued in smaller doses at the former periods; and either bark, or, if the stomach would not bear it, arsenic* was given in the intervals, till it might reasonably be supposed that the tendency to relapse had ceased. At this period, carbonate of iron was also given with safety and advantage, and with still more benefit at a more advanced period, in order to obviate debility and emaciation, and to afford a still greater security against relapse, when there were no remains of fever, nor suspicion of local affection. I have cured intermittent fevers in which bark had failed, both in the West Indies†, and in St. Thomas's Hospital, with the oxide of zinc; but I have made little use of this remedy since I became acquainted with the superior powers of opium and arsenic.

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* De morbis artificum.

The duration of this tendency to relapse, was very indefinite. There is a subtle, incomprehensible impression made on the living human body by marshy exhalations, which, though attended with no immediate visible effect, so modify the constitution, that many months afterwards, though the person has been living all the while in a pure air, an intermittent fever arises sometimes, without any visible exciting cause; but most frequently in consequence of cold, fatigue, watching, privation of some kind, or, as has been before mentioned, on the return of the autumn. This, as has been already remarked, was strikingly exemplified in the troops who had served in the campaign in North Holland in September and October, 1799. Among these was an officer who came to town to put himself under my care, in the month of August in the following year. He belonged to an encampment at Swinly near Windsor, a district not liable to such complaints; and he informed me, that not only himself, but others who had not been affected in Holland, had been seized with intermittents, and that this disorder was confined to those who had been in the abovementioned campaign. I was informed in February, 1811, by a field officer, who came home from Portugal on account of bad health, that those men of his own regiment as well as of others, who had served before in Walcheren, were, upon the first exposure and fatigue, rendered unfit for duty, chiefly by remittent fevers, so as to leave not more than a third part of them fit for service. Here there was a proportion of sick, far above that of the army in general. This tendency is still stronger, if the person had actually suffered from immediate exposure to these exhalations; a consideration which obviously suggests the necessity of continuing the remedies for a considerable time after all the symptoms of the complaint have subsided, and also of avoiding the exciting causes above enumerated.

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* The dose was from six to twelve drops of the liquor arsenicalis of the London Phamacopœia, three times a day.

† See Observations on the Diseases of Seamen, p. 442. Third Edition.

I had, in the course of this service, an opportunity of observing the extent to which the noxious exhalations extended, which was found to be less than is, I believe, generally known. Not only the crews of the ships in the road of Flushing were entirely free from this endemic, but also the guard-ships which were stationed in the narrow channel between this island and Beveland. The width of this channel is about 6000 feet; yet, though some of the ships lay much nearer to one shore, than to the other, there was no instance of any of the men or officers being taken ill with the same disorder as that with which the troops on shore were affected.

I had an opportunity of farther proving and illustrating this observation, in the service I was sent upon to Northfleet in the autumn of the following year. The spot upon which it is intended to erect the proposed dock-yard and arsenal, is a marsh of about 700 acres. On the banks of the river, both above and below it, there is a soil of a similar description, but not immediately adjoining to it on either side; for above is the village of Green Hithe, which stands on a chalky bottom, rising to a few inches below the surface, and is a projecting point of the general chalky hills which compose the adjacent country. Below it, on the bank of the river, there is a similar intervention of the chalk, where the village of Northfleet stands. Both these are nearly on a level with the marsh; yet the intermittent fevers are almost unknown at either of them, whereas they are extremely prevalent on the adjacent hills. I found this fact analogous to some others to which my enquiries at this time led me. Dr. Maton informed me, that in the neighbourhood of Weymouth, though there is stagnating water near the sea, producing intermittents, these disorders are not known in the dry districts on each side, on a level with the water, but prevail on the adjacent hills. A Cornish gentleman stated to me, that at St. Blazey, between St. Austle and Lestwithiel, agues prevail much on a hill adjoining to a marsh contiguous to the sea beach. And Major Rennel, the celebrated geographer, says, that in a district which he surveyed on the river Burrampooter, the waters of which overflow, and, upon retiring, leave an oozy flat, the agues prevail to the very summit of the adjoining hills. Lancisi mentions a hill, on which the same sickness prevails, as in the marshy lands at the foot of it.* An instance of the same fact in St. Lucia, has been already mentioned.

It is known to every one, ever so little acquainted with the operations of nature, and indeed the common phenomena of clouds and rain render it obvious to the most ordinary observer, that water, recently exhaled from the surface of the earth, has a tendency to ascend, and being lifted over parts on the same level, impinges on the neighbouring heights. There is reason to believe that impure and unwholesome particles in general are attracted by watery vapours; for it is remarkable, that, in case of fogs, offensive smells are perceived, which in a dry state of the air were fixed and quiescent. Though pure humidity, therefore, is innocuous, it may prove pernicious as a vehicle of unwholesome volatile matter. In like manner, the poisonous principle of marshes, whatever it is, being engendered by moist soils, will naturally adhere to the watery vapours, and ascend with them.

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* Vid. Lancisi de Noxiis Paludum Effluviis, page 120, Romæ 1717.

There are facts to prove, that certain artificial changes tend greatly to improve the air of particular spots. It is well ascertained, by the records of physic, by the bills of mortality, and by civil* history, that intermittent fevers were very prevalent in London, before the formation of common sewers and the adoption of other means, such as paving, conducive to cleanliness and dryness; to which, more perhaps than to the improved habits of life, in point of diet, may be ascribed the unexampled state of health in this great metropolis. There is a still stronger proof and illustration of this in Portsmouth, which is built upon a flat, composing part of the marshy island of Portsea. I am assured by a medical gentleman who practised there, but is now retired from practice, that when he first knew that place, intermittent fevers were very prevalent; but the town having been drained and paved in the year 1769, that disorder has since been unknown there.† Hilsea and other parts of the Island of Portsea have retained the same aguish character; but this disease has greatly decreased there also, since a drainage which was made in the year 1793. Numberless other examples might be adduced in proof of this, derived from the general improved state of health in various parts of the kingdom, in consequence of the inclosure of commons for the purpose of agricultural improvements, of which draining is one of the principal. This has been felt on the spot now in question; for I am assured by the Rev. Mr. Crackhilt, who has resided in the parish of Northfleet for 42 years, that there has been in that time a progressive amelioration in point of health.

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* King James the First, and Oliver Cromwell, both died of agues contracted in London.

† It appears from the late Parliamentary Report, that Portsmouth has had an accession to its population, during the last ten years, of 8401 inhabitants; that the healthfulness of it has increased, the proportion of deaths in 1800 having been one in 28; in 1810, one in 35; both computations being taken on an average of three years. Plymouth in the same time has acquired an additional population of 12,866, and the mortality has varied but little, having been one in 27 in 1800, and not quite one in 28 in 1810. The population of Portsmouth, by the last Report, was 40,567; that of Plymouth, 56,060.

It is mentioned by Bishop Burnet, in his History of the Reformation, that in the last year of Queen Mary's reign, "Intermittent fevers were so universal and contagious, that they raged like a plague;" and we learn from Sydenham and Morton, that intermittent fever was one of the most prevalent and fatal disorders in London from 1661 till 1665, and that for some years afterwards this complaint wás very rare. This was probably owing to the greater dryness of the streets by draining, when the city was rebuilt after the great fire of 1666. We are told however by Sydenham, that intermittent fevers revived before the end of that century, and were epidemic from 1677 to 1685. They prevailed a good deal during the first part of the 18th century; and we learn from a work of Dr. Fothergill's, that they occurred as an annual epidemic in the spring and autumn, as late as the years 1751, 1758 and 1754. For more than 30 years past, according to my own observation and the best information I can gather from others, this disease has not been known as an epidemic in this metropolis. I was physician in St. Thomas's Hospital, from the year 1783 till 1795, during which period, the whole number of intermittents that fell under my care, was 192. As there were three physicians, this be may reckoned the third part of the whole admissions for twelve years in an hospital containing 400 patients. I have not noted in my journal, from what quarter they came; but my memory perfectly warrants me in affirming, that the great majority of them were labourers from marshy districts, particularly Kent and Essex, and there is this internal proof of the greater part being strangers, that, of the number above specified, only 33 were females. Had they belonged to the resident population, the number of each sex would have been nearly equal. On referring to the notes, which I keep of my private practice, I find that in the course of 25 years, I have met with 63 intermittents. Of these, 12 belonged to the armies, that had served in Holland or Zealand; and of the number affected in England, more than one half came from the aguish counties. Several of the cases of those who belonged to the resident population, were so slight and irregular, as to render it doubtful whether they were strictly referable to this *genus* of disease.

One of the objects prescribed to me on my visit to Northfleet, was to ascertain how far the health of that spot might be affected by the exhalations from the Essex side of the river. What has been already said on the subject relating to Zealand, affords an answer to this question; the width of the channel between Walcheren and Beveland being about six thousand feet, and the breadth of the river at Northfleet, according to a plan in the possession of Mr. Rennie the engineer, being three thousand feet. The distance of Essex from the bank of the river at Northfleet, is therefore about the same as between the ships riding in the middle of the channel, between the shores of Walcheren and Beveland. I found, however, from the most accurate enquiry, that the endemic fever had not spread, either to the ships of war in the roads of Flushing, or to those stationed between the islands, though some of them were nearer the shore than the middle of the channel.

I was further informed by Mr. Rennie, that in boring the ground at Northfleet, he found that there were beds of chalk and gravel underneath the clay, so that these materials, when thrown up in making the excavations, would render the surface dry and wholesome; and that he had calculated their quantity would be such, as to raise the artificial surface eighteen feet higher than the present natural surface.

Taking into consideration, therefore, the great changes which would take place in the marshy spot on which it was proposed to erect the docks and arsenals, in consequence of the excavations, the drainings, the pavings, buildings, and various other operations for forges and other machinery, I gave it as my opinion, that no solid objection, on the score of health, would arise to the plan proposed.

APPENDIX,

Containing remarks on the comparative Health and Population of England and Wales, at different periods.

SINCE the preceding article was submitted to the Society, the Speaker of the House of Commons has done the author the honour of sending him a copy of the returns of the population and parish registers, made in pursuance of an Act of Parliament past last year. From these, some interesting and authentic information may be gathered respecting the public health, particularly with regard to the disease which is the subject of this article.

It appears from these returns, that the mortality in England and Wales in the year 1810, was about 1 in 49, the whole population being 10,150,615, and the number of burials, 208,184, that the births were in the proportion of 1 in 34, and that every 10 marriages produced on an average 42 children.

The counties in which the mortality was above the average, were Middlesex, where it was 1 in 36; Kent, where it was 1 in 41; Warwickshire, where it was 1 in 42; Cambridgeshire, where it was 1 in 44; Essex, where it was also 1 in 44; Surrey, where it was 1 in 45; the East Riding of Yorkshire, where it was 1 in 47; Lancashire, where it was 1 in 48. Of these eight counties, four are subject to agues, namely, Kent, Essex, Cambridgeshire, and the East Riding of Yorkshire, comprising all the counties of that description, except Lincolnshire, in which the mortality is below the average, being 1 in 51. The smaller degree of mortality in this last, is no doubt owing to the great proportion which the dry and upland part of it bears to the fenny districts. That there is a great difference in the mortality in these, is proved by their respective returns. The mortality in the town of Boston, for instance, which is situated in the fens, is 1 in 27; whereas that of Stamford, which is in the dry and upland division, is 1 in 50.

And here it may be proper to advert to an observation grounded on a very satisfactory induction of facts, in a tract lately published, of which Dr. Wells is the author*, that Phthisis Pulmonalis is but little known in those districts which are infested with the exhalations producing intermittent fevers. But as Phthisis Pulmonalis forms one of the principal heads in the general mortality of England, so much the more is to be imputed to intermittents, in those districts in which they are endemic.

It may be asked, whence arises the greater mortality of the other four counties, of which the rate is above the average. With regard to Middlesex, it is imputable no doubt to the various circumstances adverse to health, peculiar to the metropolis, such as the more intemperate habits of life, and perhaps still more the unfavorable influence of the air of this great city, particularly on young children. It is worthy of remark, however, that London has of late years been improving in salubrity; for it appears by the bills of mortality, that the burials invariably and considerably exceeded the christenings, till a few years before the close of the last century: whereas since that time the christenings have generally exceeded the burials. This may in part be ascribed to vaccination; but it cannot be entirely owing to this cause, for the decrease of burials took place some years before that admirable discovery. The first year on the records of the bills of mortality, in which the births exceeded the burials in this metropolis, was 1790. The decrease in the deaths of children under two years of age, is the most striking point of difference in these tables. In the beginning and middle of last century, their annual amount fluctuated from nine to ten thousand. Towards the end of last century, and during that part of the present which has elapsed, they have fluctuated from five to six thousand: and considering that the computed number of inhabitants in 1700, was only 674,350, and in 1810, by the late enumeration it is

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* This tract is an article in Third Vol. of a work entitled, Transactions of a Society for the improvement of Medical and Chirurgical Knowledge. London, 1812.

1,050,000, it is evident that the relative mortality in this class, is little more than one third of what it was a hundred years ago. In farther proof of the improving health of London, it is stated in this Parliamentary Report, that the annual mortality in 1700, was one in 25; in 1750, one in 21; in 1801, and the four preceding years, one in 35; and in 1810, one in 38. The increased mortality in the middle of last century, has been imputed to the great abuse of spirituous liquors, which was checked about that time by the imposition of high duties. The other causes of superior health, seem to consist in a general improvement in the habits of life, particularly with regard to ventilation and cleanliness, greater abundance and better quality of food, the improved state of medicine, and the better management of children.

The high proportion of mortality in Surrey, is no doubt owing to its containing a portion of the metropolis consisting of a population of 170,000, which is more than one-half of the whole county.

The high rate of mortality in Warwickshire, seems at first sight the most difficult to be accounted for, the air of this part of the kingdom being very salubrious. It is no doubt owing to the town of Birmingham being situated here, for it comprises two-fifths of the population; and the mortality on the average of the last ten years, is one in 34. The mortality in this town is greater than in Manchester, Leeds, or Norwich, the operations in metals, being probably more pernicious to health, than the operations of weaving.*

With regard to Lancashire, where the mortality is somewhat above the average, the number of large towns and extensive manufactures, affording a greater proportion of artisans, to rural inhabitants, than in any other county, except those in which the metropolis is situated, is certainly the cause of this, for the air is very salubrious, and the great quantity and cheapness of fuel, is extremely friendly to life, health and comfort. The report of Manchester, which is the second town in England in point of population, forms an exception to this remark, for the mortality there on the average of the last ten years, is one in 58, and in the year 1810, one in 74. But that of Liverpool, is one in 34 on the average of ten years, and one in 30, in the year 1810. In the former we have another pleasing picture of the progressive improvement of health, for it is stated by the late Dr. Percival, that in the year 1757, the annual mortality of Manchester, was one in 25.7, and in 1770, one in 28; although at the former period the population was not quite one-fourth, and at the latter period, not one-half of its present amount.* This improvement of health is greatly imputable to certain regulations of police, particularly with respect to ventilation, recommended and introduced by the above mentioned benevolent, enlightened, and active physician.

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* See Ramazini de Morbis artificum.

The like progressive amelioration of health, is deducible from these public documents with respect to the whole kingdom, as has been remarked locally; for it appears from the returns of 1800, that the mortality of all England and Wales was then one in 45; but in 1810, it proves to be one in 49.

This statement of facts, coupled with the general result of the population returns, from which it appears, that this island has acquired an addition of 1,536,000† inhabitants in the last ten years, together with the annual increase of wholesome subsistence from the rapid extension of agriculture, may be fairly deemed a proof of the increasing happiness, power and prosperity of this country, and cannot fail to afford the most solid satisfaction and delight, to every benevolent and patriotic mind.

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* See the Works of Dr. Thomas Percival, Vol. II. Warrington, 1789.

† According to the last returns the population of Great Britain was 12,596,803 persons, of whom 6,334,087 were males, and 6,262,716 were females. It farther appears, that when classed according to their occupations, 895,998 families were engaged in agriculture, 1,129,049 were engaged in trade, manufactures, or handicrafts, and that the number of families comprised in neither of these classes was 519,168.

A Case of Splenitis, with further remarks on that Disease. By ROBERT BREE, M. D. F. R. S.

[From the Medico-Chirurgical Transactions, Vol. III.]

HAVING laid before the Society a Case of "Painful and Tumid Spleen,"* which I ventured to offer as a true description of the earliest and most simple state of splenitis, I beg leave to call their attention to an example of that affection in its more advanced stage. In this part of its progress the disease may be expected to have assumed its inflammatory character, and to correspond with the account of writers on splenitis. Even in this stage I believe that the treatment may be improved. It appears that the opinions of physicians are not settled respecting this disease; since the treatment of the following case had been exceedingly various, and though it was directed by men of great intelligence and experience, the plan that was successful had not made a part of their practice; and it must be inferred, that continued daily purgation had not been yet considered an effectual means of cure in splenitis.

The subject of this case is a young lady about 25 years of age, whose disease was first noticed in the year 1808, during a state of great uneasiness of mind. She had been sensible of debility and shortness of breath in the spring of this year, but in the summer she was free from complaint. In the month of September she began to complain of an uneasiness across the pit of the stomach, below the sternum, from the spurious ribs of one side to those of the other side, and under them. The right side was most affected, but she could not lie on either side. The pulse was not disturbed. Mr. Harcourt who attended the patient observed, that it varied from 60 to 70, and only became quicker on the advance of the disease, in fits of pain and dyspnœa. In three weeks she began to suffer pain on pressure of the left side, and the right side became more easy in proportion as this sensation increased. She now had frequent nausea and puking, but an eager desire for food in the intervals of her sickness.

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* See Eclectic Repertory, Vol. III. page 283.

The first year passed in this manner.

In the course of the next year, 1809, the disease had increased greatly, and she was attended by many of the most eminent men in our profession.

In April she was affected with cough, but there was no expectoration.

In May and June she went through the full trial of a course of mercury.

In the middle of summer there was an abatement of severity in the symptoms for a short time.

In September the disease had again increased in violence. To the symptoms already enumerated there was added a new form of dyspnœa. It now came on by spasmodic fits, and it also distressed her in the intervals as before.

In November she had some mitigation of her sufferings, but there was no suspension of her complaint. On the attacks of spasm and pain the pulse rose to 120; at other times it was seldom higher than 80 in a minute.

I was desired to visit this patient first on March 17th, 1810, about two years from the beginning of her complaint, which had now greatly increased in violence, and was attended by great depression of mind. The attacks of spasm were particularly distressing: for these she took large doses of antispasmodic and opiate medicines, which gave relief for short intervals only. Those attacks consisted of difficulty of breathing, and sense of suffocation, accompanied with faintness and confusion of the head. When the paroxysm abated, extreme lowness succeeded; and the pain of the left side grew insupportable. With more or less of these symptoms, she had been unable to lie down for several months, and she had a heavy weight in the left side. Upon examination of the side, it was found to be enlarged and painful: the enlargement was not prominent at a point, but diffused from the margin of the false ribs to the pit of the stomach and backwards to the spine. The 8th rib, and the lower ribs, appeared to be pushed forward. The least motion of the body aggravated the symptoms: the pulse had become as high as 90 between the attacks: the tongue was moist, with a whitish surface, the skin was natural, the evacuations of stool and urine were natural.

I prescribed pills composed of aloes with antimonial powder and extract of conium to be taken every six hours, with a saline draught. She was recommended to bear the attacks as far as possible without applying to opiates and antispasmodics.

On my next visit I found that she was beginning to derive benefit from this plan. The symptoms had abated gradually from the first purgative operation of the medicines, which were continued with the effect of producing numerous stools every day till the 21st of April.

April 21.—The pulse was less frequent: the spasms were were less distressing in violence and duration, and she had seldom taken the anodyne draught. The tension and soreness of the side were much less. She was directed to pursue the same medicines.

May 5, 19.—She had continued to have five or six stools daily, and to discharge much urine, but neither of these evacuations had any remarkable appearance. The swelling of the side was more diminished. The spasms were not so frequent or severe, and the dyspnœa and local pain, though yet constant, were become bearable. The pulse was 96 only during the attacks. From the general amendment, it was determined to attempt the use of a stomachic, combined with aperients. An infusion of cascarilla was directed to be taken twice in the day with soda and aloetic wine: and a saline draught was prescribed to be taken at bed time, with tartarized antimony, and camphorated tincture of opium.

June 16, 30.—After a short trial of the stomachic draughts, it had appeared that pain, general irritation, and dyspnœa were increased, and that the bowels had not been so freely operated upon as by the former medicines. She was therefore directed to resume the aloetic antimonial pills, and to take a saline draught with sulphate of potash instead of that with infusion of cascarilla.

July 14, 28.—This plan of medicine having been pursued through the month of July, all her complaints were considerably lessened by the end of the month. She left her room about this time.

August 11.—She still persisted in the evacuant plan with continued good effect. The fulness or general swelling of the side was gone, but there was a perceptible thickness of the cartilaginous extremities of the false ribs, and of their integuments, with some tenderness on the pressure of these parts, close under the false ribs, and on their edge up to the scrobiculus cordis. By the absence of the swelling internally, these external parts were more distinctly noticed as the seat of complaint. The side had been invariably more uneasy when the bowels were less purged. She had, however, been moved from four to six times every day. The pulse was still quicker than natural, but it generally was at 90 in a minute without much variation. It appeared proper to continue the plan of medicine, by taking pills of tartarized antimony and aloes every night, and a saline draught every morning.

September.—At the beginning of this month the thermometer stood at 80, and in a few days afterwards at 55 and 60, but she felt no return of disease, and could now lie very well on either side. The pulse was 84. The pills and draught had procured not less than four motions every day, which had no extraordinary appearance. She had a good appetite, and the power of taking exercise without fatigue or dyspnœa.

As the disease had manifested itself most in the spring and autumn, I had looked to the advance of the present season with anxiety, but from the favorable state of the case at this period, I began to expect that the patient might escape a relapse. She was not, however, so far confirmed in health, or the disposition of the affected organ was not so far changed, as to realize my hope.

For several days after the 20th of September, a weight had been gradually increasing in the left side, attended with some uneasiness in lying on the right side. The head was confused and giddy, and she had a short and panting respiration, with chilliness and heat at intervals. The pulse was 92. She had lately used a fuller diet and more exercise, and the menses were expected in a few days. I hoped that this change, with the effect of active purging, might reduce the action and fulness of the vessels, and remove the attack. I prescribed larger doses of aloes united with calomel and a purging saline draught every morning. She was to take a draught of camphorated mixture with camphorated tincture of opium after the operation every night, and oftener if necessary. These means answered very well. In two days the menses appeared in great abundance, but with a natural colour, and the patient was relieved from this short attack by the end of the month.

October.—After this she remained free from complaint for several weeks.

November 14.—In the beginning of this month the disease returned with some variation of symptoms, in consequence of taking cold. It had assumed a more acute character, than I had observed since the formidable symptoms gave way in the spring; and it might have been mistaken for pleurisy by a person unacquainted with the preceding circumstances. She had a severe cough, and a pain in the side, where the complaint had been before felt. She had much head-ache, sickness of the stomach and rigors. The pulse was 110.

I ordered a saline draught to be taken every four hours, and pills of extract. coloc. compos. and gamboge to be taken directly, and repeated according to circumstances once a day. Twelve ounces of blood were taken from the arm, which had the appearance of healthy blood: there was no size, and the texture was good. The bleeding afforded very little sense of relief from pain, which extended from side to side, but was felt acutely in the left side under the false ribs. There was no swelling perceptible externally. In this state of things the menses appeared on the 21st of November, and gave very speedy and almost perfect relief. The cough was gone: she had no head-ache or sickness: the pulse was reduced to 85. She was directed to take pills as before, of aloes and tartarized antimon .

At the end of this month, she was free from complaint. The pulse was at 80. She had a perspiring skin, and evacuated many stools every day. She was directed to continue the aperient pills.

It appeared to me that the disease was stopped in September by the evacuant medicines, and the appearance of the menses, and I considered it doubtful if the relapse would have occurred in November if she had not taken cold. The attack in November had the character of acute splenitis, in which the investing membranes were principally, if not wholly, the seat of the disease. This acute state was favoured by the increased irritability of the organ in consequence of its long suffering, and the continued application of necessary treatment; but it seemed to be the harbinger of a confirmed disposition to sound health in the part affected.

Since the end of the year 1810, this patient has remained well, with the slight exception of feelings of uneasiness in the side on the approach of the menses, which menstruation has always removed. But she considers that the pills of aloes and tartarized antimony have been, by their effect on the bowels during the last year, a security for the confirmation of her health.

Remarks on the preceding Case.

I have considered this case as affording an example of an advanced state of splenitis. It might be called the "Second Stage," when compared with that disease which I had the honor of describing to the Society as a case of "painful and turgid spleen" in its most simple state. In the earliest condition of this disorder the organ is swelled from the passive state of its vessels, which receive a greater proportion of blood than they can return. No fever accompanied this stage, nor was it the effect of fever, but an idiopathic affection, leading to inflammation, by tension and irritation of the membranes that invest the spleen. The means of cure were experienced to be active and daily evacuations, so persisted in as to become the probable occasion of disease, if they had not been essential to the removal of it. A considerable length of time is necessary to the cure of this affection, because it is dependent on the weakness and passive condition of the vessels of the spleen, and its duration must be in proportion as the return of their energy and contractile power is slow. If the second stage of splenitis be made free from danger, it must require still longer time before it terminates in a cure than the first stage, as the disposition to a renewal of vascular swelling will be more confirmed by time, and show itself periodically.

The more advanced stage of this disease has been often described, and too often furnished the anatomist with observations after death.

In the second stage the pulse becomes quicker, and it is long, in convalescence, before it is reduced to its natural standard. The increased pulse is produced by painful irritation at first, and next by the actual tension of the membranes, proceeding to inflammation and adhesion of adjoining parts. The quickness of the pulse will assist in distinguishing the degree of progress of this disease, for it will be found, by reference to histories, that in a great proportion of cases, there was no warning of the growing mischief in its earliest stage; and that painful affection of the left side existed in many other cases, long before fever was induced, though these ended fatally.

In the first stage the patient can lie upon the left side, but not on the right side. In the second stage it is impossible to lie on the side affected. The spasmodic action of the diaphragm is more likely to come on in the second stage, and may be much aggravated by stimulant treatment. There is no emaciation in the first stage of a morbid kind, nor any considerable emaciation in the second stage, notwithstanding the large and continued evacuations. But in the third and last stage of splenitis, emaciation is always an attending symptom, combined with hectic or slow fever, particularly in middle-aged and elderly people. In this third stage diarrhœa supervenes, as well as dysentery, and discharges of grumous and dark blood take place, by vomiting and by stools: these discharges give temporary relief in many cases, and occur long before the final event.

Besides the two cases which I have submitted to the Society, it is right to observe, that I have seen the result of many others during the last three years, three of which occurred in young men and the majority in women. All these have concurred to show me in a satisfactory manner, that drastic purging, long continued, is the proper mode of treatment. By this practice a young woman has been relieved of a swelling of the spleen and epileptic fits at the same time. The fits began with the first symptoms of disease in the left side, and have disappeared for the last year, during which time she was gradually recovered from the swelling and pain.

Compositions of aloes and antimony were preferred in the cases that have been related, and generally in others, but not exclusively adopted: large doses of neutral salts have however appeared exceptionable when exhibited daily, as they have occasioned flatulence and depression. But aloes, extract of colocynth, and scammony with jalap, have acted without this inconvenience, and calomel has been combined with these, at intervals, producing more effectual discharges from the bowels: tartarized antimony in such minute doses, as not to puke, has always appeared to increase the beneficial effect of those combinations.

This idiopathic disease affects females more than males, and they have been always relieved in a signal manner by the flow of the menses: this fact may give rise to an idea somewhat speculative, but not without support, that a particular correspondence or sympathy of action, may exist between the spleen and the uterus. Each of these vascular organs has a structure which yields to extension and contraction with less disturbance of the whole habit than happens from equal changes in other organs; and wherever splenitis is relieved by nature or art, the inferior vessels of the body receive more than their usual quantity of blood, which passes from the uterus or the intestines: a fact agreeing with the 48th Aphor. of Hippocrates, lib. 6. "Τοισι σπληνωδεσι, &c. Splenicis dysenteria superveniens salutaris."

The progressive effects, and the complications of this complaint may appear after death; but it is obvious that no certain conclusions can be drawn from dissections respecting the two first stages of it, and particularly that the condition of the organ in the earliest and most simple state of its suffering cannot be proved by anatomical examination.

Splenitis, complicated with extensive visceral obstructions, has been very frequently the effect of remittent and endemic fever; but a tumid spleen occasioned by this cause, cannot afford any reasoning respecting the idiopathic disease, which in its progress will be distinguished by a hectic fever, of a very different character. The difference between such complicated affections and this simple disease will appear sufficiently manifest to those who consult the histories of Lieutaud and Morgagni, but particularly the recent descriptions of Dr. Davis in his treatise on the Walcheren fever.

Aretæus says, that the disease is fatal to elderly people, but that it is not so dangerous to youth. Dr. Heberden's later observations confirm the assertion of Aretæus respecting the tendency of the disease in people advanced to middle age, in whom it is fatal in six months.

It is very important at every period of life to distinguish the disease in its early stages; we are not to expect the presence of pyrexia, and external swelling, to make the case obvious. Pain of the left side, and inability to lie on the right side, are often the only signs, and if these two symptoms exist without fever, there cannot be much doubt respecting the seat of the disease, for a painful disease of any other organ of the left side would be accompanied with fever, and other symptoms of constitutional sympathy and irritation.

The spleen has been described very generally as a passive organ, and not readily sensible of inflammatory irritation. (See Dr. Pemberton.) This character can occasion little wonder, if the structure and economy of the spleen be well considered. (See Malpighi and Hakely, &c.) The absence of pyrexia in the early part of splenitis does not appear so remarkable as it does in cases of the strangulated intestine, in which Dr. Baillie says, "The pulse is sometimes not increased in frequency beyond the standard of health, and yet the inflammation of the bowels has been discovered afterwards by the operation to be very great."

It is impossible to say how far a continued application of purgatives might have answered in advanced cases, or in the first stages of cases, which ended fatally, as this practice has not been followed in any instance within my knowledge. In a case detailed in the Edinburgh Journal, it was found that purging was the best means of relieving the patient, but it was only practised at intervals, and it was accompanied by the use of medicines which must have acted upon an opposite principle to that of evacuation, possibly counteracting its influence. Similar cases are to be found in Morgagni and Lieutaud; and it must appear from the result, that it was a third stage of splenitis when the ingenious writer first saw the case, the distinguishing character of the early part of the disease having been lost. The patience and insensibility of the organ is so remarkable, that changes that must have been of long standing, have been only discovered at the death of the patient.

A person met with sudden death from accident, and, as it is related in the "Acta Parisiensia," his spleen was found *stoney* in its internal structure without any other mark of disease.

Enlargements are recorded by writers to have existed without notice of the change, and fever or severe pain only came on to alarm the patients after a long period, though these diseases terminated in death.

It is therefore true in the distinguishing of splenitis, that the disease may have made great progress without observation. Pain may have been felt without swelling, and swelling without pain, and both may have existed without the pulse having been disturbed for a long period in the first stage of splenitis; but on dissection, the spleen, after such previous circumstances, has been found morbid, and the only diseased organ.

Cases of Cynanche Laryngea,

BY J. R. FARRE, M. D.

[From the Medico-Chirurgical Transactions, Vol. III.]

CASE I.

On Monday evening, the 13th of August, 1810, — Essex, aged 38, complained of a sore throat. On the 14th at noon, his respiration was affected, and in the evening it was loud and hoarse, and he was long in completing each inspiration. He could not sit still for many moments, but walked about the room in the greatest distress, often struggling for breath. Unable to lie down, he passed the ensuing night in the same restless and agitated state, with occasional delirium. On the 15th, the difficulty of his breathing was in no respect diminished. On the 16th, at four in the afternoon, a medical man observed the following symptoms: respiration performed with extreme difficulty; pallid face, protruding eyes; an anxiety difficult to be expressed; the uvula large, œdematous, and speckled, as if about to ulcerate; tonsils not affected; pulse laborious and frequent. The treatment had been hitherto limited to the use of cathartics, and the application of blisters to the chest and throat. A momentary relief was now obtained by taking twenty-four ounces of blood from his arm. At seven he was under the operation of a preparation of tartarised antimony and squills, which had excited vomiting, and was then acting on his bowels. The blood which had been drawn exhibited the appearances which are usual under active inflammation. At nine o'clock, when sitting up, he expired.

Morbid appearances twenty-four hours after death.

The velum palati, pharynx, and a portion of the œsophagus with the larynx, trachea and bronchiæ were carefully detached. The pharynx and œsophagus being slit down posteriorly, the mucous membrane investing the epiglottis, rima glottidis and the posterior part of the larynx, was found to be œdematous to so great a degree, as to make it evident that suffocation had been produced by stricture of the glottis. The tumefaction ceased at the junction of the larynx and trachea.

The internal mucous membrane was red and thickened. The traces of inflammation were less apparent in the trachea and bronchiæ, the membrane being irregularly reddened. No coagulable lymph had been effused on any portion of this membrane; and even its mucus was not changed. There was an appearance of slight congestion in the lungs; some adhesions of the right pleura existed, but these were not recent; the heart was natural, and the liquor pericardii slightly increased. Excepting an enlarged spleen, there was no disease of the abdominal viscera.

In this case the inflammation did not pass the stage of congestion in the mucous membrance of the trachea, and of serous effusion under the mucous membrane surrounding the glottis; but in the following, the inflammation went into the adhesive stage, and closed the glottis by the effusion of coagulable lymph.

CASE II.

A poor, but industrious and temperate man, about 60 years old, on Sunday the 31st of March 1811, was affected with a painful and difficult deglutition. On the following morning, April 1st, alarmed at his inability to swallow fluid, which, on the attempt being made, returned by his nose, he sent for Mr. Weston, who found the tonsils inflamed, and disposed to ulcerate. A brisk purge was ordered. At ten o'clock, on the same evening, his respiration suddenly became difficult, when Mr. Weston immediately drew from his arm thirty-two ounces of blood, which proved to be very sizy. In the course of an hour I attended, and observed the character of his disease at this stage. Although the tumefaction of the tonsils was inconsiderable, deglutition was extremely painful, and very difficult: respiration was performed with convulsive and long continued efforts: his voice was nearly inaudible, and he could only whisper. He answered my enquiry respecting the seat of his suffering, by putting his finger on the superior part of the thyroid cartilage. He felt no pain in the chest. All the muscles of respiration were thrown into violent action, and he lay with his mouth widely opened, pupils dilated, face pale and sunken, skin covered with a clammy sweat, and his pulse at 133, and small. His powers were prostrate, and general bleeding could not be repeated. The anterior part of the throat was covered with leeches, but the disease never paused. At midnight, the operation of bronchotomy seemed to be the only resource; and soon after one o'clock, I decided on its employment.

About two o'clock, Mr. Astley Cooper attended, and as suffocation was instantly impending, the operation was immediately performed, by dividing, laterally, the ligament which connects the thyroid with the cricoid cartilage.* The dyspnœa was much relieved by the operation. He now lay passive, breathing by the natural and artificial apertures, and the inordinate action of the muscles of respiration had ceased. He swallowed some nourishment with a painful effort. In this state he passed the night, and the greater part of the following day. In the afternoon, the respiration by the natural passage entirely ceased, but was continued by the artificial aperture. He was now evidently sinking, and expired at six in the evening.

April 3d, eight o'clock A. M. Dissection by Mr. Astley Cooper.

The right tonsil inflamed and vesicated. The epiglottis swollen, its edges meeting behind, excepting just at the upper part. Pharynx inflamed, somewhat vesicated, covered with coagulable lymph about the epiglottis, but free from inflammation near its termination in the œsophagus. The aperture which had been made between the cartilages, appeared to be about half the size of the glottis.

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* The following note, made by Mr. Cooper on the morning after the operation, he obligingly sent me with the drawing.

"I was called by Dr. Farre and Mr. Weston, at half past one A. M. on the 2d April, 1811, to a person aged more than sixty, who had Angina Pharyngea. He was gasping for breath; every muscle that could be brought into action to assist respiration was employed. He was seized with sore throat yesterday, and at ten o'clock to-night with dyspnœa, which has increased so rapidly that he appears to be dyeing; pulse quick, face and lips pale, pupils dilated.

"I began the operation by making a cut between the thyroid and cricoid cartilage, longitudinally, and then transversely into the membrane which united these cartilages. No vessel of the least importance was divided, and he breathed through the opening, so as to be immediately relieved."

The mucous membrane of the larynx and trachea was pale.

There was some accumulation of mucus in the cells of the lungs, and a slight effusion of serum into their reticular texture. The left pleura partially adhered, and the cavities contained rather more fluid than is natural to them. The abdominal viscera were not examined.

I may be allowed to remark, that Cullen's character of his fourth species of cynanche will not embrace the cases which I have above described.

"Cynanche (Pharyngea) cum rubore in imis præsertim faucibus; deglutitione maxime difficili, dolentissima, *respiratione satis commoda*, et febre synocha."

The anterior part of the pharynx was indeed the seat of the inflammation; but that portion of the membrane being also common to the larynx, it may, in a practical sense, be useful to term the disease *laryngea*, because it proves fatal by constricting or actually closing the glottis, and constitutes precisely that case which, in its ultimate degree, imperiously demands the operation of bronchotomy.

APPENDIX.

When the cases of Cynanche Laryngea, which I had the honour to communicate to the Society, were read, the learned President, Sir Henry Halford, noticed the deficiency of communication in the various medical records respecting this form of cynanche, and briefly referred to the cases of Dr. David Pitcairn, and Sir John Macnamara Hayes, as instances of the same species. Respecting the former only of these distinguished physicians, was I at that time successful in obtaining the particulars which I wanted. In an interesting biographical memoir of Dr. David Pitcairn, published in the Gentleman's Magazine for April, and in the European for June, 1809, I read the history of the disease which deprived the world of this excellent physician. A more valuable report, giving an account of both cases, has been recently presented to the profession by Dr. Baillie, in the third volume of the Transactions of a Society for promoting Medical and Chirurgical Knowledge.

The conversation to which my communication gave rise, has induced me to offer some observations on the diagnosis, and treatment of a disease which seems to be little known, and which assumes a more than usual interest from its having proved fatal to two physicians, notwithstanding their own practical knowledge, and the aid of the most eminent in the profession.

In all the cases of cynanche laryngea, the mucous membrane investing the epiglottis, glottis, and chiefly the external and posterior surface of the larynx, was the seat of the inflammation, by which the rima glottidis was so much narrowed, that the vital functions were actually extinguished by the stricture. It is true that the tonsils, the arch of the soft palate, the uvula, the tongue, the internal membrane of the larynx and trachea, all, or several of them were inflamed; but this was only an extension of the action to one common membrane which invests the whole, whilst it was most intense at the mouth of the larynx. In both the cases communicated by Dr. Baillie, uneasy sensations were felt in the larynx. In one of them, this symptom appeared at the accession of the inflammation, and strongly excited the patient's anxiety for the result, at a time when the apparent inflammation in the fauces was so inconsiderable, that upon a superficial observation it would hardly have been noticed. I did not see Essex alive; but the slight swelling of the uvula and tonsils which appeared on dissection, made it obvious that his disease could not have been mistaken for cynanche tonsillaris. In Case II. when I desired the patient to point out the seat of his suffering, he placed his fore-finger on the middle notch of the thyroid cartilage, to which the epiglottis is fixed. The difficulty of the diagnosis does not in fact lie between this inflammation and the cynanche tonsillaris, but between it and the cynanche trachealis. Dr. Pitcairn wrote on a piece of paper, that his complaint was croup. Croup very nearly approaches the cynanche laryngea, but the difference between the seats of the inflammation will appear by comparing the symptoms and morbid appearances which belong to each disease. In the cynanche laryngea the symptoms are, uneasy sensation in the larynx, difficult and painful deglutition, partial swelling in the fauces, a supervening and perpetually increasing difficulty of breathing, inflammatory fever. In the cynanche trachealis there is a difficulty of breathing,* without any swelling in the fauces, or painful deglutition, the expirations, especially in coughing, are very shrill, the fever is inflammatory. In both, the voice is changed, and, in extreme cases, is suppressed; the termination is by suffocation.—The following are the morbid appearances: in the former, the mucous membrane investing the epiglottis and margin of the glottis is inflamed; serum is effused under it, or coagulable lymph on its *external* surface, by which the *rima glottidis* is narrowed, or actually closed. In the latter, the mucous membrane of the larynx and trachea is inflamed, and a layer of coagulated lymph is formed on its *internal* surface, from the extremity of the epiglottis to an indefinite extent within the trachea, by which the *tube* itself is narrowed, or actually closed. A puriform fluid, instead of mucus, is found in the trachea and bronchiæ. These characters chiefly apply to simple cases of both species, for as they differ in their seats, but not in their nature, it is possible for both forms to be combined in the same patient, and it were an easy matter to prove that a still greater extension of inflammation than this does actually take place in these organs.

In comparing the morbid appearances with the symptoms of cynanche laryngea, it is not difficult to determine that the inflammation, from its limited seat, from its not exceeding the bounds of the adhesive stage, and from the symptomatic fever, requires the use of the lancet. I may be here allowed to give an unbiassed opinion; for in neither of the cases which I have described did I order general bleeding: the first, I have already stated, was not attended by myself; the second was not in a state to admit of this remedy when I was consulted. Both were bled, it is true, but it was done in the very advanced stage of the disease. When the function of respiration can scarcely be carried on, the body will not bear large bleeding; but although in the ultimate stage, the vital powers are greatly depressed by the copious abstraction of blood, yet on the accession of the inflammation this remedy seems to be less a matter of choice than of necessity. Dr. Pitcairn was bled once copiously on the third day, and died on the fourth. Sir John Hayes was thrice bled, to the amount, in the whole, of thirty or forty ounces, on the second day, and died on the fourth morning. In both these cases, it must be manifest to every one who reads the history of them, that the patients died not from exhaustion, but from strangulation. By those who will take the pains to consider inflammation as a process, it will be understood that it may be checked, but cannot be suddenly extinguished by the most active means; time must be allowed for the process to decline, even after the fairest efforts have been made to arrest its progress. Unhappily, this necessary time can rarely be obtained in this disease, in which the activity of the inflammation is expended on a small, but most vital seat; for the glottis once narrowed, may be closed by the local action, even after the general powers are prostrate.

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* The difficulty in the respiration is the symptom by which the danger must be estimated; for the ringing cough, without that adjunct, is of little importance. Many confound merely this symptom, which also not unfrequently occurs in the catarrhal affections of children, especially during dentition, with croup, which is, comparatively, a rare disease.

These simple, and, I trust, natural views of the subject, lead to a treatment which must be varied according to the stages of the inflammation: the first, or stage of congestion, is the period for active depletion, on the accession of the disease, in the first twenty-four hours, as soon as the patient feels the slightest uneasiness in the larynx, or a very painful and difficult deglutition, which the apparent state of the fauces cannot explain. There is not in this stage any objection to copious general bleeding, suited to the strength of the patient; but if this treatment fails to relieve, and the difficulty of breathing supervenes, it is too certain that the narrowing of the glottis has commenced. In this second and alarming stage, or that of effusion, it may be proper to try local blood-letting, by free cupping from the neck and shoulders, and by a continued oozing from numerous orifices made by leeches on the throat. In both stages it is reasonable to resort to those internal means which diminish the force of the circulation in the capillary arteries; and to produce this effect, none seem better adapted than the combined powers of the tartarised antimony and the submuriate of mercury, in doses suited to the strength of the patient.

In the advanced period of this second stage, when the glottis is so much narrowed that the signs of strangulation begin to appear, a perseverance in these or other ordinary means seem no longer to afford even a chance of preserving the life of the patient; his physician must now resign him to the horrid death of slow suffocation, or make a last effort to save him by the operation of bronchotomy. That the disease is a local one, that it is acute, and of short duration, that it affects a mucous membrane, which consequently does not readily take on the adhesive inflammation, or if it should be so acutely inflamed, easily sheds the lymph that had been effused on it, are circumstances which, in the otherwise hopeless state of the patient, justify a trial of this operation. But if it be further considered, that bronchotomy has actually preserved life under the more unfavourable disease of cynanche trachealis, the operation becomes expedient. And here I am happy to find that the resort to bronchotomy, in Case II. is supported by the opinion of Dr. Baillie, who had actually proposed this operation in one of his cases, which was only not performed because the surgeon arrived too late. He also enforces this opinion by the following advice. "If no substantial advantage is produced by this plan* in thirty hours, it might be advisable to perform the operation of bronchotomy at the upper part of the trachea, just under the thyroid gland. This operation would probably enable the patient to breathe till the inflammation in the larynx, more especially at the aperture of the glottis, had time to subside."

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* Viz. At the very beginning of the attack, one copious bleeding until the patient faints, followed by the use of opiates, to remove the spasm, which, in his opinion, has some share in producing the difficulty of breathing.

Different parts of the windpipe have been selected for the operation by different surgeons. This seems to me a matter of considerable importance; but to enter upon it would lead me out of my province. It is more within the line of my duty to consider what forms of cynanche admit of the operation. In the cynanche maligna, the inflammatory action, which is vehement, effuses coagulable lymph on the tonsils, and, in the worst cases, on the mucous membrane of the larynx; but the strength of the action is soon spent, the lymph perishes, and the surfaces which effused it die, and slough, or open into ill-conditioned ulcers. In such a disease, if symptoms of strangulation supervene, it is almost needless to say, that bronchotomy is inadmissible. But the badly ulcerated or sloughing tonsils, with typhoid fever, sufficiently distinguish this malignant disease from the simple cases which demand the operation. In every uncombined case of cynanche laryngea, when other means have failed, I think that the patient ought to have the chance, even if it should prove a small one, which this operation affords. Every case of simple cycanche trachealis is so nearly allied, both in its nature and manner of proving fatal, to the cynanche laryngea, that the same mode of treatment, with a little modification, which is applicable to the one, is also suited to the other. But when the cynanche trachealis is combined with pneumonic inflammation, of whatever kind, then the operation cannot avail. In proportion as the inflammation is extensive, it is less intense in the larynx, and I think it is not difficult to discriminate between the cases, at the period when the operation is required, by the manner in which the respiration is conducted. In the one, the difficulty of breathing is evidently that of impending strangulation; in the other, that of deep seated and extensive oppression. The difference may, perhaps, be illustrated better by a case of each kind.

Case of Cynanche Trachealis.

——— Williams, a fine boy, at the age of two years and five months, was carried off by an acute disease in little more than forty-eight hours after the attack. The distressing and violent symptoms which marked its progress, and the rapidity with which it proved fatal, induced his mother to solicit me to ascertain, by dissection, the cause of his death. Previously to the examination, I minutely enquired into the circumstances of the case, and the following simple, but impressive history, is given nearly in her own words.

On the 8th of July, 1806, her attention was directed to the boy by his unusual hoarseness; his voice was gruff. He had also a peculiar cough, which a lodger in the house noticed, and said, it distressed him to hear it. But she was less on her guard, because the boy played as usual, and was quite cheerful: she applied, however, to a druggist, and purchased a mixture for his cough. On the following day his skin was hot; he was thirsty; his urine was high-coloured, and, on standing, copiously deposited a white sediment; his bowels were regular. His appetite was not yet impaired; at dinner he eat rather greedily a slice of pork, and some cabbage, and afterwards a great deal of fried meat; but at almost every mouthful, he said, water, mamma, more water. As the evening advanced, her anxiety on his account increased, and a nurse advised her to apply a blister to the upper part of the chest. Having complied with this advice, she sent for an apothecary, who told her that the child was in danger; that the blister was as good a remedy as she could use, and did not prescribe any thing else. The boy was yet playful, and at nine o'clock, whilst she held him in her arms, he remarked a kite in the air, and pointed it out to her. His breathing was then shrill and difficult. All the ensuing night his skin was very hot; he took no more food, but called for water continually. A noise attended every respiration, which she expressed by the monosyllables—flip, flap. It seemed to her that something was lifted up every time he breathed, and in striving to breathe, his head, body, and limbs worked.* On the 10th all the symptoms were aggravated, the respiration became every moment more difficult; he coughed less, and spoke faintly; his lips, neck, hands, and the bottoms of his feet turned livid, his skin became cold, and he seemed to be insensible for an hour before his death, which happened at four in the afternoon.

Examination of the body on the twelfth, at six o'clock in the evening, fifty hours after death.

External appearances.—The body was very fat, and seemed to have been vigorous. The feet, hands, and lips, were quite livid; the posterior parts of the body much discoloured, but not so entirely livid as the former.

Thorax.—When the sternum was removed, the lungs, instead of collapsing as they usually do, remained turgid with air. On each side of the chest the pleura was free from adhesion, and there was no serous effusion. The cellular membrane of the lungs, opened by sections of different parts, was dry, except where bloodvessels or ramifications of the bronchiæ were dissevered: from the latter a whitish fluid issued. The pericardium contained very little liquor.

Throat.—The larynx, trachea, and larger branches of the bronchiæ were removed. On looking into the larynx, through the glottis, the passage seemed to be closed. The *external* mucous membrane of the larynx was not affected; but on cutting open the windpipe posteriorly from the rima glottidis to the subdivisions of the bronchiæ, a thick layer of coagulated lymph was found on the *internal* mucous membrane of the larynx, extending from the extremity of the epiglottis into the trachea, about a finger's breadth below the cricoid cartilage. The rest of the membrane lining the trachea and bronchiæ was visible, and of a red colour. The sacculi laryngis were completely concealed, the greatest deposition of lymph having taken place near this portion of the windpipe, by which it was so much narrowed, that there was scarcely room for the point of a crow's quill to enter. It also contained a puriform fluid, some of which, lodged in the narrow passage within the coagulated lymph, gave the impervious appearance before noticed, and probably occasioned, by its ascent and descent during respiration, the peculiar noise which the mother described.

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* This simple description of the mother sufficiently marks the continued muscular efforts, partly involuntary and convulsive, which were made to prolong respiration.

In the head and abdomen the appearances were those which belong to the most perfect state of the several organs.

This was a case of simple croup, in which the life of the child might probably have been saved by the timely performance of the operation of bronchotomy.*

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* This operation having been performed frequently and successfully in cases of foreign bodies lodged in the windpipe, it may be affirmed that, under the circumstances which demand its employment, whilst it constitutes the only means of preserving the patient, it is in itself, the mere operation being considered, nearly void of hazard. It has not been so frequently performed in cases of Cynanche Trachealis. On this account I may be allowed to extract from the inaugural Dissertation of Dr. Thomas White, published at Leyden, in 1786, a most happy case of this kind. "Puer quinque annorum per duos vel tres dies signis Cynanches Trachealis laboraverat, cum medicus advocatus fuit. Ægrum invenit anhelum, fere strangulatum. Respiratio enim maxime fuit laboriosa, atque spiritûs emissio adeo impedita, ut vix flammâ facis speculove prope os admotis sentiri posset. Die Februarii undecimo, anno 1782, rebus ita se habentibus, emeticum hor. X. A. M. præscriptum fuit, atque omni horâ repeti jussum. Quot emetica devoravit, quidve vomitione ejectum, non didici; sed omnibus frustra usus est.

"Hor. ix. vespertinâ, nil remittente morbo, morteque ipsa minitante, complures chirurgi tracheam incidendam esse consentiebant; quod statim perfecit Domin. Andree. Incisione factâ, aer magna vi proruebat, respiratio protinus facilius absolvebatur, atque æger (cujus vox ante vix audiri potuerat) exclamabat, se nunc levatum, se nunc sanum esse. Tussis vehementissima per canulam argenteam, aut tubum cavum flexilem, (qui Gallicè Bougie vocatur) intra plagæ oras immissum excitata est, nec prius cessavit quam ea penitus fuerunt amota. Dein vulnus panno ex nebulâ lineâ confecto tegebatur.

"Die Feb. xiimo. delirium leve noctu supervenit. Spiritum nunc facilius ducit. Calor et pulsuum crebritas minuuntur.

"Die Feb. xiiimo. Nocte magna copia muci flavi pus referentis (qui a bronchiis plane excreari videbatur) e vulnere effusa est, totumque thoracem externè humectavit. Hodie facies, et præsertim musculi oris, levibus convulsionibus afficiuntur.

"Die Feb. xivmo. Pyrexia multo minor, facilis per os spiratio, vox quæ ad hoc usque tempus submissa ac stridula fuit, nunc ad tonum naturalem redire ncipit. Mucus minus copiosè ejicitur.

"Die

Case of Cynanche Trachealis, combined with Pneumonia.

Miss S., three years and a half old, had been for three days affected with a catarrh and hoarse cough. Her mother, during this period, had twice given her a tea-spoonful of antimonial wine, which had freely vomited her. The last dose was given on Friday evening, July the 7th, when Mrs. S. also applied a large blister to her breast. On the morning of the 8th the symptoms were much aggravated; she then gave her an infusion of senna, and at noon sent for Mr. Newington, who considered the disease to be croup, and prescribed one grain of tartarized antimony in one ounce of an infusion of senna, of which a third part was to be given every half hour, till it excited vomiting. He also ordered that two leeches should be applied to one of her arms. Meeting with Mr. Newington in the afternoon, he asked me to see the child. The respiration was performed with considerable difficulty,

" Die xvmo. Omnia symptomata leviora.

"Posthac nil dignum notatu occurrit; intra mensis unius spatium vulnus perfectè fuit curatum, ægerque ad pristinam sanitatem restitutus.

" Duobus abhinc annis valetudo permansit bona, nec ullum incommodum ab incisione expertus est puer."

The above interesting report seems to be deficient only in the particulars of the operation; and these, through the kindness of Mr. Astley Cooper, I have obtained. They are given in the words of Mr. Andree. " At nine in the evening, in the presence of several of the faculty, among whom was my esteemed friend Mr. Ford, surgeon, I performed the operation. The child being laid on his back, and kept as quiet as his great restlessness in struggling for breath would admit of, I commenced the operation by a straight incision from the thyroid gland towards the sternum, about one inch and a half in length. I then cautiously laid bare the anterior part of the trachea, without any material hemorrhage or difficulty, except what arose from the child's struggles. I then made a small transverse incision, or rather puncture through the membrane, which connects the second and third annular cartilages, and then a similar incision between the fourth and fifth cartilaginous rings; the respiration was immediately relieved. I now proceeded, according to the rules laid down by the most approved authors, and as myself had taught in anatomical lectures, to introduce a silver canula into the trachea through one of the orifices. It instantly produced a most violent and incessant cough, until the instrument was withdrawn. A hollow bougie being introduced, produced the same effect. I then contented myself with dressing the wound superficially, cutting an orifice in the plasters to correspond with the openings into the trachea, and covering the wound with a piece of gauze laid loosely on the neck."

but it was not noisy, nor was the cough so ringing as I have heard it in cases of Cynanche Trachealis. The character of a general oppression of the respiration, yet passive state of the child, as opposed to the convulsive and struggling efforts with which it is performed under a more complete obstruction of the upper part of the windpipe, in cases of simple croup, was striking. The child being of a vigorous habit, and the inflammation acute, it was proposed to draw six ounces of blood between the shoulders, by cupping. I did not visit this child again, but Mr. Newington communicated to me the following particulars: She was cupped, and in the evening a double quantity of the mixture, ordered in the morning, was repeated at four doses, without producing any other effect than great languor and cold perspirations. The breathing continued to be very laborious, but the cough was not so frequent. On Sunday morning, the 9th, before Mr. Newington saw her, her mother had given her a tea-spoonful of antimonial wine; she vomited a little, and in the course of the morning had three evacuations from the bowels. In the afternoon the antimonial wine was given in the dose of a tea-spoonful and a half without exciting vomiting. The countenance, which was at first very florid, had now become pale and languid; her pulse had lost its fulness and hardness. At seven in the evening he found her a little easier, but very languid. Her mother had administered, without his order, a tobacco glyster; about two scruples of the leaf had been infused for that purpose. On Monday her pulse was weak, and about 160, her breathing very difficult, her head thrown back, her face pallid. She was perfectly sensible, and swallowed some milk in a hurry, as if in danger of being strangled. A squill mixture was given, and brought up some viscid mucus. In the evening the frequency of pulse and general languor had increased, her lips were slightly livid, but the rest of the countenance was pale, and about twelve o'clock at night she died.

July 12, 1809, the body was examined by Mr. Astley Cooper, in the presence of Mr. Newington and myself, and I noted the following particulars.

External appearances.—The general aspect was pallid. The growth proportioned to the age, and the abundance of fat proved the previous vigour of the child, and that she had been cut off by a very acute disease.

Thorax.—The right cavity of the chest being laid open, a dark coloured fluid appeared in considerable quantity. It had not the character of an effusion from an inflamed surface. A particular examination ascertained that the œsophagus had been acted upon by the gastric fluid, which had also destroyed the pleura posteriorly, and thereby admitted of an exudation of blood from the lung, which, together with some of the contents of the stomach, and probably some prior serous effusion from the pleura, made up the quantity of fluid. The left cavity contained a little serous effusion. A partial exudation of coagulable lymph, on some parts of the surface of the pleura, had made it somewhat rough, impairing that polished surface which is natural to the healthy membrane. The pericardium and heart were not affected. The tongue, pharynx, œsophagus, larynx, trachea, and lungs were removed together. On cutting open the windpipe posteriorly through its whole length, its membrane was found besmeared with a brownish mucus, under which it was every where covered with a thin coat of coagulated lymph, that extended into the ramifications of the bronchiæ, but was no where in sufficient quantity to close the pipe: even in the larynx the sacculi were apparent. The lungs had suffered excessive congestion; their parenchyma was very generally red and tumid, yet they floated when thrown into water. The effusion, therefore, into their reticular texture was serous, but the air-cells and minute ramifications of the bronchiæ were loaded with a yellowish white fluid, the secretion of an inflamed mucous membrane.

Abdomen.—The stomach had been extensively acted upon by the gastric fluid, and in many places was in a state of dissolution. The other viscera in this cavity were not minutely examined—their general appearance was healthy.

The head was not opened.

This was a case of croup, combined with extensive catarrhal and pneumonic inflammation, in which the operation of bronchotomy was incapable of benefiting the patient.

On the Nature and Detection of different Metallic Poisons. By Mr. CHARLES SYLVESTER, of Derby.

[From Nicholson's Journal, No. 154.]

I. *Arsenic.*

As a poison the most virulent, and, at the same time, the one most to be dreaded, from its extreme insipidity, and the consequent readiness with which it may become an instrument in the hands of a murderer, or be received into the system by accident, is the white oxyde of arsenic. For the detection of this substance, when thus admitted, various processes have, at different times, been recommended; and the papers of Dr. Bostock, published in the 5th volume of the Edinburgh Journal, have, very generally, been thought to contain the best directions for this purpose. After various experiments, he decides in favour of sulphate of copper and carbonate of potash, which precipitate the white arsenic under the form of *Scheele's green.* It cannot fail to have occurred, however, to every one who has repeated these experiments, that the phenomena produced in this process are much too ambiguous to enable a man, where the life of an individual is at stake, to swear positively that arsenic has been detected in his operations. The alkali employed, whether arsenic be present or not, uniformly occasions a precipitate, by detaching the oxyde of copper from its combination with the sulphuric acid. The colour of the deposit, it is true, is not absolutely the same in both cases; but when it is recollected, that experiments of this kind are, for the most part, conducted on solutions coloured to a greater or less degree from the matters found in the stomach or intestines, this minuteness of distinction will be deemed scarcely appreciable by the eye even of the most experienced operator. Such uncertainty ought, most assuredly, not to attend investigations of this nature; and the process of Dr. Bostock, therefore, becomes objectionable from this circumstance.

The method of detecting arsenic next deserving of remark, is one lately recommended by Mr. Hume, of London. It consists in adding a quantity of subcarbonate of soda to a solution suspected to contain this metal; and afterwards presenting to it a small piece of nitrate of silver. It is far preferable, Mr. Hume finds, to employ the latter salt in the solid form; and he recommends an angular piece, of the size of a pin's head, or thereabouts, held at the surface of the fluid, on the point of a knife. The existence of arsenic will be shown by a yellow precipitate, which falls down in rather abundant quantity. Whenever arsenical mixtures are operated upon, which have but little contamination with foreign ingredients, this process will, undoubtedly, succeed very well; but if ever muriatic acid be present, and this is always the case where materials from the stomach are mixed with the fluids under experiment, the test is then wholly useless, as a muriate of silver will be immediately formed, and the yellow compound, said to be so unequivocal in its indication of arsenic, of course be prevented from appearing. Neither of the processes yet spoken of, therefore, can receive that confidence, which ought to attach to investigations of such high importance. This is not a mere speculative difficulty, but was fully proved to me during a course of experiments made some time ago, in consequence of a case of poison which came under my notice; and having, with the assistance of my friend, Mr. James Oakes, devoted, at that period, a good deal of attention to that subject, with a view ,if possible, to supply the deficiency, we were led to the use of two re-agents, which, I think, will not only be found free from the objections applicable to those already mentioned, but appeared to combine most of the advantages requisite in operations of such extreme delicacy. The re-agents employed were the acetate of copper, and oxyacetate of iron. For the preparation of them it is merely necessary to decompose oxysulphate of iron, and sulphate of copper, by acetate of lead, adding the latter until a turbidness ceases to appear.

The resulting mixtures should contain as little of the original ingredients in combination as possible; particularly the iron test; since an excess of the oxysulphate, as was observed in our experiments, suspends the action of the acetate, and prevents its combination with the arsenic. The presence of acetate of lead is objectionable, from causing a precipitate with arsenic, which cannot be distinguished by the eye from sulphate of lead. When the two acetates are properly prepared, they combine with arsenic with considerable facility; that of iron producing a bright orange yellow deposit, and that of copper, green. The decomposition, however, especially of the former, does not appear to be complete till they have been suffered to stand a few seconds. One of the great advantages attending these re-agents is, that their action is independent of the use of alkali, which, in the two former processes, from the precipitate uniformly occasioned by its presence, throws considerable uncertainty over the results of an experiment; and where the mixtures are coloured, as will always be the case, in a greater or less degree, in examining the contents of the stomach, must rob these methods of the whole of their value. With the tests here recommended, the *colour* of the compounds produced is not of that primary importance; for, since almost all their combinations, particularly those of copper, are soluble in water, except the one produced by an union with the white oxyde of arsenic, the appearance of any precipitate may, without much risk, be referred to the presence of this metal. Of the two, experience has confirmed us in a preference of the acetate of copper, partly from its more sensible action on arsenical mixtures, and in some measure, also, from the easier mode of preparation. As the oxyacetate of iron, however, may sometimes be occasionally resorted to, in order to afford additional evidence of the accuracy of an experiment, it may be necessary to add, as a farther direction for its preparation, that the oxysulphate from which it is obtained should be made by dissolving iron *with the aid of heat* in nitric acid, afterwards precipitating the oxyde, and re-dissolving it in sulphuric acid. The salt thus formed contains the metal at a *maximum* of oxydation.

The whole of the above processes for the detection of arsenic, of course, refer to the cases where it has been exhibited only in a fluid state. When it can be accomplished, however, by far the most satisfactory means of arriving at a knowledge of the presence of this substance, is to reduce it to a metallic state, which may be readily effected, either by subliming it in a glass tube with the aid of charcoal, or exposed between two plates of copper, according to the plans recommended in chemical works.

II. *Corrosive Sublimate.*

For the discovery of corrosive sublimate, the methods almost exclusively resorted to until very lately, were its precipitation by means of one of the carbonetted fixed alkalies, or by lime-water, which detach it under the form of an orange-coloured, or orange yellow, sediment. Dr. Bostock has since recommended muriate of tin; but, to the use of this test there is considerable objection, inasmuch as a precipitate, very similar in appearance to the one obtained from mercury, is always occasioned whenever muriate of tin comes into contact with a solution containing water. This could not fail to render the result of any experiment ambiguous; but should it so happen, that, from a particular circumstance, the employment of the muriate might be rendered at all desirable, its effect upon the fluid suspected to contain corrosive sublimate should be collated with the appearance produced from its mixture with an equal quantity of water, since the precipitate occasioned in a mercurial solution is remarkably more abundant than in the latter case, and sufficient to dispel all uncertainty arising from this cause. But a test, at once the most easy of application and satisfactory, is furnished by means of galvanism, in which the mercury is separated in a metallic state. This experiment can be made by any person, and almost in any situation. It is merely necessary to take a piece of zinc wire, or in its absence a piece of iron wire, about three inches in length, bent twice at right angles into a shape something like the letter U, but with a flattened bottom.* Its width should be about equal to the diameter of a common gold wedding ring; and the two ends of the bent wire must afterward be tied to a ring of this description. This being accomplished, take a plate of glass not less than three inches square, lay it as nearly horizontal as possible, and on one side drop some sulphuric acid, diluted with about six times its weight of water, till it spreads to the size of a half-penny. At a little distance from this, towards the other side, next drop some of the solution supposed to contain corrosive sublimate, till the edges of the two liquids join together. After this is done, let the wire and ring, prepared as above, be laid in such a way, that the wire may touch the diluted acid, while the gold ring is in contact with the suspected liquid. If the most minute quantity of corrosive sublimate be present, the ring, in a few minutes, will be covered with mercury on the part which touched the fluid. It might be proper to filter the mixture before submitting it to experiment, or otherwise, to pour it clear to the top; since calomel, which is so frequently taken as a medicine, might possibly be present, and give rise to these appearances. The insolubility of this substance, however, enables us easily to avoid it by the precautions here suggested.

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* The Greek Π is no doubt the figure intended.

III. *Lead.*

Although lead is not so virulent a poison as either arsenic or corrosive sublimate, its effects upon the animal economy are so greatly to be dreaded, that those liable to its influence in manufactures or domestic life, cannot be too much cautioned against it. The use of lead, in the construction of water cisterns, pumps, and conduit pipes, would, at first thought, appear highly objectionable; and in many instances it is, no doubt, productive of injury. The reason of its not being uniformly so, has been ingeniously pointed out by Guyton de Morveau. Most mineral waters contain a greater or less quantity of some salt formed by sulphuric acid. This acid is not only the means of precipitating any lead which may happen to be dissolved in the water, but has the effect also of completely coating the anterior surface of the vessels with the sulphate thus formed, which is a substance not liable to decomposition, and therefore defends the lead from all future action of any solvent in the mineral water.

The dreadful disease called the *Devonshire colic*, was clearly shown by Sir George Baker to be occasioned by the lead constituting the lining of the cyder press, and other vessels, and which was dissolved by the acetic acid developed during fermentation. The acetic acid is here asserted to be the solvent, because the malic acid forms a salt with lead which is insoluble.

The effects of this metal have been still more conspicuous in its use by wine merchants, to correct the acidity of wine. The practice was at one time so common in France, that in a particular year, when much sour wine prevailed, many thousands of people are said to have fallen victims to its influence; and had it not been for the interference of government, it is impossible to say how widely this dreadful evil might have extended itself.

In the new rum of our West India colonies, the presence of lead has been marked by still more dreadful consequences. It became a matter of great surprise, however, that, after this liquor had been kept in a cask for twelve months, it lost its deleterious qualities. The lead employed in the vessels for the manufacture, but more especially in those for the distillation of rum, could not fail to introduce this metal in great quantity through the medium of the acetic acid, which is a constant product of fermentation; and had it not been for a circumstance about to be mentioned, it is difficult to conceive where the calamity might have terminated. Nature, however, in the shape of accident, stepped in as mediator, and redeemed the lives of those destined to drink the fascinating potion. It was before observed, that the rum lost its poisonous property by remaining a certain time in the cask; yet, although the fact was known, and the evil remedied, many years ago, I am not aware that any one has accounted for the change produced in the liquor. About two years since, my friend, Dr. Forester, of this place, gave an interesting lecture, on behalf of the Literary and Philosophical Society, upon the subject of poisons; and it was not till then, that I became acquainted with the curious facts abovementioned. It immediately occurred to me, that gallate of lead was insoluble; and I lost no time in making some experiments, to ascertain the fact. The method by which I prepared some gallic acid for the purpose may, perhaps, be new, and not wholly uninteresting, to some of your readers. My first step was to make a strong tincture of nut-galls in proof spirit. To this was added, by little at a time, a nearly saturated solution of isinglass, till the whole of the tannin was precipitated. The liquor separated from the coagulum at first appeared rather opaque, but without colour. By standing at rest for a few days, a deposition of flocculent matter took place, consisting of gelatine and tannin, which left the liquor transparent and colourless. This I considered as a solution of gallic acid, nearly pure. At all events, it did not contain any substance which prevented its being an excellent test for iron or lead. I soon found, that in very dilute solutions of lead, where sulphuric acid, or a sulphate, produces no visible precipitate, the presence of this metal was made sensible by the aid of the gallic acid. This confirmed my suspicions on the subject, and left me in no doubt as to the real cause of the rum losing its pernicious qualities; for, since the joint existence of lead and gallic acid in any fluid is impossible, from the formation of an insoluble gallate, the lead of the rum becomes precipitated by the gallic acid furnished by the oak cask. These facts supply an excellent, though indirect, method of ascertaining, in many instances, whether lead be dissolved in wines. If, on testing the wine with iron, it is found to contain gallic acid, we may safely infer, that no lead is present; but if no gallic acid be detected, then either this acid, or the sulphuric, may be added, which will precipitate the lead in the form of a white powder. Sulphuret of potash, or lime, may also be employed, which will occasion a blackish deposit.

The prevailing use of lead in dairies is very objectionable, especially when the milk is immediately used as an article of food. On the separation of the curd and butter, the dissolved lead will, no doubt, exist in the whey. When milk is kept too long in warm weather, the acetic acid is formed, which takes up the lead; and it is a fact well known in dairies that milk remains sweet longer in leaden vessels than any other. This is, mistakenly, attributed to the *coolness* of the lead; but the true cause is as abovementioned. The evil would, in all probability, be much more considerable, were it not for the presence of the sacchalactic acid, which takes the lead from the acetic acid, and forms an insoluble compound.

IV. *Copper.*

The only other metallic substance likely to be taken into the stomach is copper; and for this the beautiful blue colour produced in its solutions by pure ammonia, is the most decisive and satisfactory evidence that can be required.

As a general re-agent, either for the present metal, or for lead, mercury, or arsenic, none, in point of delicacy, can exceed liquid sulphuretted hydrogen. It detects the smallest quantity of metallic matter present in any mixture; and though the coloured media, in which the experiments of this sort are generally obliged to be made, prevent that reliance upon the mere colour of a precipitate requisite to give this test an exclusive-preference; yet it may frequently abridge the labour of an operation very considerably, and at once decide whether the poison has been metallic or otherwise. In conducting this sort of experiments, the recommendation of Dr. Bostock, to view the result by *reflected*, and not by *transmitted*, light, is highly important; and in no case, perhaps, ought a decision to be given without comparing the effect of every test on the suspected mixture with the phenomena it presents in fluids of known composition.

Observations on Diabetes Insipidus. By JOHN BOSTOCK, M. D. of Liverpool.

[From the Medico-Chirurgical Transactions, Vol. III.]

DIABETES INSIPIDUS, when existing as an idiopathic disease, is of such rare occurrence, that I presume the following case, which appears to me to be entitled to this appellation, will not be uninteresting to the Society.*

Mrs. ———, aged 50, about four years ago was under my care for a violent and long continued attack of menorrhagia, by which she was much reduced in her strength, but which was finally removed, and was followed by a total cessation of the menstrual discharge. She considered herself well, although a great degree of weakness remained; she complained of being

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* The rarity of the disease is very decidedly proved by this circumstance, that since the time of Willis, who first pointed out the sweetness of the urine, scarcely any distinctly detailed case of diabetes insipidus is on record. Cullen, with that degree of scepticism which is so characteristic of a philosophic mind, hesitates whether he should admit its existence, yet he informs us that he had seen one case in which the urine was not saccharine.* The two cases related in Dr. Rollo's work, in which a large quantity of watery urine was evacuated, were consequent to a local injury of the kidney, and therefore do not belong to this class.† Nor do I regard the case in Dr. Duncan's annals, as entitled to the appellation of diabetes; it was attended with profuse perspiration, and it may be inferred from the remarks, that the appetite was impaired.‡ The only reference made by Cullen is to Lister; but upon an examination of this author, I think it will be found, that he believed in the existence of diabetes insipidus, merely upon hypothetical grounds. What a contrast does the prudent caution of Cullen present to the hasty decision of Sauvages, who peremptorily declares, that all the diabetic cases of the ancients were insipid, because they do not mention the sweetness of the urine, while it is admitted, that ever since the time of Willis, all the cases have been saccharine.§ In referring to Lister, it may be proper to observe, that the opinion which has been brought forwards with a certain air of novelty, of the stomach and not the kidney being the primary seat of the disease, was implicitly declared and defended by this author a century ago.||

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* First lines, 4. 85. Synop. 2. 246.

† P. 224, 5.

‡ Duncan's Ann. 1801. 390. 1802. 361.

§ Nos. Meth. 2. 384.

|| Exerc. Med. p. 74.

much fatigued after using the least exercise, and remarked that although her appetite was good, yet that her food never appeared to give her any support. The general weakness and the peculiar state of the stomach increased upon her, and at length became so marked, that I was again called upon to visit her. The symptoms which she described, immediately led me to suspect diabetes, and I found that the quantity of urine passed was much greater than natural, and that the calls in the night were so frequent as materially to injure her rest. I learned, that for some weeks she had suffered from an unusual degree of scurviness of the head, so much so, that it appeared every morning as if the whole cuticle were removed, and if the hair was not daily cleaned, the part was affected with the most intolerable itching. The whole surface of the body felt dry, and particularly the palms of the hands, but I did not perceive any eruption, except on the hairy scalp, or its immediate vicinity. Although the skin was frequently hot, yet she assured me that she never perspired.

The average quantity of urine passed by this patient in 24 hours, was five quarts; an ounce measure of it, which I examined, weighed 492 grains: therefore the whole quantity evacuated would be exactly 10¼lbs. Troy. It was pale and nearly transparent; it had a faint odour; it slightly reddened litmus; and the specimen upon which the following experiments were made, had the specific gravity of 1.034. The residuum, which was left by slow evaporation, in its physical properties did not seem to differ from the extract of healthy urine. It appeared, by a simple calculation, that she was discharging between nine and ten ounces of solid matter in the 24 hours; this may be estimated at about 8¼ ounces more than that evacuated in the healthy state, while the excess of water above the natural quantity would be about 7lbs. Troy.*

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* The weight of the entire urine in the healthy state, and the proportion of the solid contents to the watery part, can only be obtained by an average estimate, and that subject to great uncertainty, in consequence of the numerous circumstances which produce a variation both in the quantity and the quality of this excretion. Haller, with his accustomed diligence and accuracy, has collected a great number of authorities with respect to

The constituents of the urine were then more particularly examined. A quantity of the extract was digested in alcohol, and when all was removed that the alcohol was capable of dissolving, the fluid was evaporated. The part left by the evaporation of the alcohol, was to the part which the alcohol did not dissolve in the proportion of 17 to 4; and as the former of these consisted principally of urea, it appeared to be in this case rather more than four times the weight of the saline substances. By referring to the quantities mentioned above, it will be found, that this patient was discharging daily about 7¼ ounces of urea, and nearly 2 of different saline substances. I could not discover any portion of sugar in the urea, nor did I observe any thing peculiar in the nature of the salts.

With respect to the proportion which the animal matter in the urine bears to its saline ingredients, the statements of different writers are completely at variance. MM. Fourcroy and Vauquelin say, that the salts form only $\frac{1}{20}$ of the weight of the extract,* while Mr. Cruikshanks informs us, that they amount to about $\frac{3}{5}$ of it, or, more exactly, that they are to each other as 315 to 220.† It is not impossible, or even improbable, that the urine may differ from itself so much in dif-

the quantity of the urine, from which he fixes it at 49 ounces daily. But in forming this estimate, he has not exercised that judicious discrimination for which he is generally so conspicuous; after stating the different quantities that are given by different writers, (which vary from 28 to 64 ounces,) he takes the general average, regarding the number more than the weight of his authorities.* The observations which appear to me by much the most accurate, are those of Rye, who fixes the quantity at 40 ounces.† The proportions which have been assigned for the water, and the solid contents of the urine are as various as those respecting the entire quantity. Haller has collected different estimates, which make the water from nineteen-twentieths to forty-nine fiftieths.‡ Mr. Cruikshanks informs us, that the extent varies from one twenty-seventh to one thirty-sixth in the healthy state;§ perhaps we shall not be far from the truth, if we take the average at about one-thirtieth.

* Ann. Chim. 31. 68.

† Rollo, p. 439.

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* El. Phys. 26. 4, 6.

† App. to Rogers on Epid. Diseases.

‡ El. Phys. 26. 3, 14.

§ Thomson's Fourcroy, 3. 315.

ferent states of the body, as that both these accounts may be correct, as applying to extreme cases; but granting this to be the case, they still give us no idea of the average condition of the fluid. The results of two experiments, which I made with a good deal of attention, were, that in the first, the salts were to the urea as 13 to 69, and in the second, as 24 to 79; the average of these is as 1 to 4, a proportion which is not very far from the medium between the estimates of the French chemists and Mr. Cruikshanks. Supposing that the whole of the solid contents in the healthy state, amount to 600 grs. the urea will compose 450, and the salts 150 grs.; my patient was therefore discharging daily above 6 ounces of urea, and above 1½ of salts more than the natural quantity. Such a waste of the system, may point out to us the final cause of the increased appetite for food, and the excessive thirst, which form some of the most characteristic symptoms of diabetes.

In endeavouring to detect the presence of sugar in this urine, I employed the action of nitric acid, and concluded that there was no sugar, because no oxalic acid was formed. In order to try how far this method of reasoning was correct, a quantity of pure urea, prepared from healthy urine, had $\frac{1}{10}$ of its weight of sugar added to it, and upon it was poured 6 times its weight of a mixture of equal parts of nitric acid and water, and heat was then applied. When it had been boiled to the consistence of a thick syrup, and was beginning to assume a dark colour, showing that the nitric acid was separated, it was removed from the lamp; in a few hours crystals were formed, which, after being dissolved in water and recrystallized, seemed to consist of pure oxalic acid.

With respect to the treatment which was adopted in this case, I shall make only a very few remarks. As the urine was not saccharine, animal diet was not prescribed, and those remedies only employed which were supposed to have the power of strengthening the digestive organs, and reproducing a healthy state of the skin. For the former purpose the preparations of iron were chiefly relied on, and for the latter the warm bath; but I suspect that the morbid symptoms were so far connected, that whatever tended to relieve the one, was likewise beneficial to the other. The result was completely successful; the constitutional affections disappeared, the urine was reduced to the natural standard, and the surface regained its healthy action. The patient has remained well for above 12 months.

To the case that has been now detailed, I conceive the appellation of diabetes is strictly applicable; it possesses the three pathognomonic symptoms of the disease, the increased appetite for food, the suppression of the cutaneous discharge, and especially, the evacuation from the urinary organs of a larger quantity than ordinary of animal matter. This latter circumstance is essentially different from the mere increase in the quantity of water, a morbid state which has been often confounded with diabetes, but from which I regard it as totally dissimilar. The quantity of matter discharged from the urinary organs, when the disease is fully formed, or exists in an aggravated state, is so considerable, as to increase the specific gravity of the fluid, notwithstanding the great increase in its quantity.* In this case it appeared, that the specimen upon which the experiments were made, which was obtained after the patient had been for some time without evacuating the bladder, had its specific gravity considerably increased, although the average specific gravity of urine passed during the 24 hours, was not above the ordinary standard. Although cases of diabetes insipidus have been so seldom noticed, yet I am disposed to believe, that it is a more frequent occurrence than is generally imagined. It it seldom that the attention is directed with so much minuteness to the urinary discharge, as to enable the practitioner to ascertain the nature of its ingredients; and should the increase of its quantity be noticed, it is thought to be accounted for, by the increased quantity of fluids that are employed to allay the thirst.

We are perhaps not able to decide with perfect certainty, whether this disease be the commencement of the diabetes mellitus, or has a tendency to terminate in this state. I conceive, however, that the opinion is in itself probable, and it appears to be strongly confirmed by a case which occurred to

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* Henry in Medico-Chirurg. Trans. II. 119.

Dr. Lewin, of Liverpool, the particulars of which he communicated to me, and upon which, at his request, I made some experiments. The patient was a middle aged female, and had a variety of complaints indicating general debility, and a decayed state of the digestive organs, which led him to suspect the existence of diabetes; and upon enquiry, he found that the urine was rather more copious than natural. He sent me a quantity for examination, the general results of which were as follows. It was somewhat opake, and of rather a browner colour than natural; by standing, it deposited a sediment, and then became more transparent. The different reagents produced nearly the usual effects, except that the scaly crystals, formed by adding nitric acid to the urea, were less distinctly visible than ordinary. I thought the odour of the urea was less urinous than natural, but I was unable to procure from it any oxalic acid by heating it with nitric acid.

Dr. Lewin afterwards sent me a second specimen of urine, discharged by the same patient, the properties of which were, in several respects, different from what I had before examined. It was more opake, and deposited a greater quantity of sediment, its odour was sourish, and scarcely urinous. The extract produced by a slow evaporation, instead of being granulated, was of the consistence of a thick syrup, and when nitric acid was added, the scaly crystals were only imperfectly formed, and mixed with a quantity of uncrystallised matter. This half crystallized mass had a fresh quantity of nitric acid poured upon it, and the heat of a lamp applied; a brisk effervescence was excited, and a vapour disengaged, which had the odour of nitro-muriatic acid. The process was continued until the fluid was nearly evaporated, and a mass was obtained, which, when cold, resembled candied honey. This was dissolved in water and partly evaporated, and in 24 hours some fine spicular crystals were formed, which produced a copious precipitate with lime water, and exhibited every property of oxalic acid. The result of this examination appeared to me so important, that I was desirous of having it confirmed by Dr. Henry, and I accordingly sent him a quantity of the solution of the honey-like substance. He replies to me as follows: "The smaller phial unquestionably contains oxalic acid, as I determined not merely by the fact of a precipitation, but by examining the precipitate, which, in all its characters, answered to oxalate of lime."

To Dr. Lewin's sagacity in detecting the nature of the disease in this early stage, we may consider ourselves as indebted for the important fact, that a small quantity of sugar can exist in urine along with a large quantity of urea.* The case is almost equally decisive in favour of the conversion of the insipid, into the saccharine diabetes, and renders it probable that the two states alternate with each other, until, as the constitution becomes more and more impaired, the saccharine state of the urine predominates.

I have referred above to that morbid state of the urinary discharge, in which a large quantity of fluid is evacuated, but in which the animal matter exists in less proportion than natural. Such cases have generally been considered as diabetic; but I am disposed to doubt the propriety of the denomination, and to regard them either as the sequel of proper diabetes, or as affections of a totally different nature, perhaps originating in a disease of the kidney.† A remarkable instance of a large discharge of watery urine lately occurred to Dr. M'Cartney, one of the physicians to the Liverpool Infirmary, who sent me some of the fluid for examination. Upon pouring it from the bottle in which it was contained, it seemed so very unlike urine, that I concluded there had been some mistake respecting it, and requested that a fresh specimen might be procured. It appeared, however, that my suspicion was without foundation, for I received a second quantity, which exhibited exactly the same properties with the first.

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* The fact here stated is precisely the converse of that advanced by Dr. Henry; he discovered that a small quantity of urea can exist in urine with a large quantity of sugar, while I have detected a small quantity of sugar united to a large quantity of urea. These facts may be considered as mutually illustrating each other, and become more interesting by their contrast.

† I gave an account of a case of this kind some years ago, which I called diabetes insipidus, but as I now conceive, incorrectly.—Mem. of Lond. Med. Soc. VI. 258.

It was nearly without colour and smell, slightly opake, neither acid nor alkaline, and had a specific gravity not much superior to that of water.* At the time when the patient was discharging $4\frac{1}{2}$ quarts in the 24 hours, the solid extract amounted to no more than $\frac{1}{110}$ part of the weight of the fluid. The action of nitric acid upon the extract produced a kind of spongy mass, in which the scaly crystals were scarcely, if at all, perceptible, nor was any oxalic acid formed when an additional quantity of nitric acid was heated with it. The oxymuriate of mercury threw down a slight flocculent precipitate, which was rendered more dense by boiling, but no effect was produced by heat alone, nor by the addition of tan. The other re-agents, commonly employed to detect the salts of the urine, threw down precipitates, which seemed to be in the usual proportion to each other, but in smaller quantity than ordinary. Heated alcohol dissolved about $\frac{1}{3}$ of the extract; the alcohol, upon being evaporated, left a brown substance, which in its external appearance bore a resemblance to the urea, but which was found to differ from it in being reducible by a moderate heat to a dry state, when it assumed a kind of crystalline appearance. Nor did it produce any of the scaly matter with nitric acid. Upon the addition of this substance, there was a considerable effervescence, and the extract was converted into a spongy mass, that appeared to be composed of very minute cubical crystals, of nearly a white colour. That part of the extract, which was not soluble in alcohol, was chiefly dissolved by water; but a portion was left, which, when separated and dried, had the appearance of a fine black carbonaceous powder: it composed about $\frac{1}{7}$ of the mass which was not soluble in alcohol. The composition of the extract would therefore be nearly as follows: 63 parts of a saline mass, which seemed to consist of the usual muriatic and phosphoric salts, 26 parts of an animal matter, and 11 parts of the carbonaceous powder. The urine soon acquired a nauseous smell, became slightly alkaline, and deposited a small quantity of a flaky sediment; but it afterwards remained for several months exposed to the atmosphere, without experiencing any farther change.

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* Dr. Henry, to whom I sent a specimen of this urine, estimated the specific gravity at 1.0058.

I relate this case rather as exhibiting a singular and curious state of the urinary discharge, than as directly leading to any physiological conclusions. One circumstance, however, is worthy of notice, that in this, as well as in the case of watery urine which I formerly published, the deficiency of the salts is not so considerable as of the animal matter. In this respect the urine seems to be analogous to the albuminous fluids of the body: for in the elaborate experiments of Dr. Marcet, which have been related to the Society, the salts were always found nearly in the same quantity, however various was the proportion of the animal matter; a circumstance which coincides with my own experiments on these substances.

Knotshole Bank, near Liverpool,
April 18, 1813.

Experiments on the Extract from Diabetic Urine.

The following train of facts, although not immediately connected with the subject of the above paper, I consider not undeserving the notice of the Society, as tending to throw some light upon the nature of the extract procured from the urine of diabetes mellitus.

About eight years ago, I procured some diabetic extract from urine, which was so highly saccharine, that by mere evaporation at a low temperature, the whole was converted into a dry substance, of a granulated and half crystallized texture, which in its appearance very nearly resembled fine brown sugar. It remained for a long time without undergoing any alterations; but having been placed in a damp room during the last winter, upon examining it some weeks ago, I found its appearance entirely changed. The paper containing it, which consisted of several folds, was covered with a thick coating of mould, not unlike the mould of cheese. The substance that remained within the paper was much diminished in bulk, and had lost all appearance of sugar; it was of a viscid consistence, and looked like half melted glue; it was of a brown colour and musty smell. It seemed to experience no farther change by exposure to the atmosphere. Water, when boiled with it, was tinged of a light brown colour; the substance seemed to be rendered whiter, but it did not appear to be soluble in this fluid. Boiling alcohol rendered the substance harder and whiter, but no solution was effected. Caustic potash, when assisted by heat, dissolved it in moderate quantity; the solution was brown, soapy in its consistence, and frothed much when boiled; sulphuric acid threw down a white flaky precipitate from the solution. Nitric acid, when diluted with an equal bulk of water, soon began to act upon this substance; when heated to ebullition the substance was dissolved, with the disengagement, first of nitric vapour, afterwards of nitrous gas. The colour of the acid was much deepened, and its consistence was thickened; as it cooled, some flakes separated that resembled a concrete oil: the acid had acquired that peculiar odour which attends the action of nitric acid upon the muscular fibre. When potash was added in excess, the nitric solution acquired a deep orange colour, a gray precipitate was thrown down, and the fluid was left nearly transparent. When ammonia was added to the nitric solution, there was a very copious emission of white fumes, and the same change of colour as with potash.

These experiments were sufficient to show, that the saccharine extract had been converted into a substance very nearly resembling coagulated albumen. It is probable that the albumen must have existed in the first instance, mixed with the saccharine matter; but in what way the saccharine matter was decomposed, and the albumen coagulated, are points that I confess myself not able to determine.

Cases of Premature Labour artificially induced, in women with Distorted Pelvis: To which are subjoined some observations on this method of practice. By SAMUEL MERRIMAN, M. D. Physician-Accoucheur to the Middlesex Hospital, and to the Westminster General Dispensary.

[From the Medico-Chirurgical Transactions, Vol. III.]

MRS. POPE, 21 years of age, had been many hours in labour of her first child, under the care of a midwife, when my assistance was requested, on account of the difficulty of the case. When I arrived at the house, I was informed that the difficulty arose from the heads of two children being in the pelvis together; but upon an examination *per vaginam*, I discovered, that the projection of the sacrum had been mistaken by the midwife for the head of a second child. As the distortion of the pelvis was so great, it was evident, that the labour could not be terminated safely to the mother, unless the child's head were diminished. I resolved, therefore, to have recourse to the perforator; but as the child's head lay very high, and the os uteri was by no means sufficiently dilated, it was necessary to wait many hours, before I could proceed to the operation. At the end of eighteen hours, the os uteri being more dilated, and the head of the child being forced lower, so as to be more within the reach of the perforator, I made an aperture through the cranium, and extracted the parietal bones. Notwithstanding this diminution of the head, it required a considerable length of time, and very strong pains, to accomplish the extraction of the child. The mother recovered slowly, but at length perfectly, from the effects of this labour. This took place in September, 1804.

In August, 1807, I was again called to her assistance, when in labour at the full time; and was obliged to effectuate the delivery, by the same operation as before. I now very strongly recommended to her, to have her labour excited at seven months, in any future pregnancy; this offering the only chance of her having a live child; and my uncle, Dr. Merriman, who gave me his assistance, both upon this and the former occasion of my attending her, joined with me in this recommendation.

In a few months she became pregnant again, and having fully completed the seventh month of gestation, and being in good health, I punctured the membranes, in the evening of September 26th, 1808, giving her afterwards a dose of laudanum. Labour pains came on, in about twenty-four hours after the operation, and I was called to her, early in the morning of the 28th, when I found the *nates* presenting. During the progress of the labour, the child was felt strong and lively; but before the head could be brought through the narrow part of the pelvis, the pressure on the navel string was so great, as entirely to stop the circulation, and thereby occasion the child's death.

In November, 1811, having, according to her reckoning, completed seven months and a fortnight of her fourth pregnancy, I punctured the membranes, on Thursday the 7th, in the evening. The waters were discharged in a very gradual manner; and on Tuesday the 12th, when labour pains came on, the feet were found to be the presenting parts. In consequence of this mal-presentation, the child perished from the compression of the navel string; for it was not possible to bring the head of the child through the narrow part of the pelvis, with sufficient expedition, to preserve its life.

After both these deliveries, the woman recovered remarkably well.

Mrs. North, 26 years of age, when advanced to the seventh month of her first pregnancy, met with a fall, or some other accident, which threw her into premature labour. I was informed, that upon this occasion, her delivery was effected without difficulty, and the child was born, with so much of life, as to cry faintly once or twice, before it expired.

In November, 1809, she fell into labour of her second child, at the full period of gestation. It was now for the first time discovered, that her pelvis was very much deformed, and that there was no possibility of the delivery being effected, without extraordinary assistance. The surgeon-accoucheur in attendance therefore requested, that there should be a conultation upon the measures to be adopted; and two physician-accoucheurs being joined in consultation with him, it was judged absolutely necessary, to have immediate recourse to the perforator. Accordingly the contents of the cranium were evacuated, but it was not till after a very long, hard labour, that the child could be brought into the world.

In her third pregnancy, she consulted with Dr. Denman, and myself, respecting the expediency of having premature labour brought on. As we both agreed in opinion, that this would give the only chance of her being delivered of a living child, it was determined to perform the operation. Having, as she believed, completed seven months and a fortnight of her pregnancy, and being in good health, I punctured the membranes, in the evening of Tuesday, February 13, 1811. The pains of labour began, in the night of Thursday the 15th, and I was sent for the next morning, when I had the mortification of finding the child's arm in the vagina.

Having apprized Dr. Denman of this untoward position of the child, he came immediately to see the patient, and to afford his advice and assistance. The os uteri appearing to be dilateable, I cautiously endeavoured to introduce my hand, for the purpose of turning the child; but the irritation this produced, threw the uterus into such strong action, that we thought it more prudent to desist, and to allow some more hours to pass over, before another attempt should be made. We expected, that, in the mean time, the parts would become more dilated, and as the child was small, that the feet would be forced by the pains, nearer to the os uteri, by which the operation of turning would be much facilitated.

At 8 o'clock in the evening, I made another attempt to turn the child, and accomplished it, without more difficulty than usually occurs in turning, in a contracted uterus, after the liquor amnii has been so many hours evacuated.

The feet, being brought into the vagina, were soon expelled by a pain, and almost immediately afterwards the hips protruded through the os externum. At this time, the pulsation in the funis was strong, and the child vigorous; but when the head became wedged in the narrow part of the pelvis, the navel string was so much compressed, as soon to occasion the child's death. It was nearly half an hour before the head could be brought into the world, though the action of the uterus continued very strong, at intervals, during the whole time.

Immediately after delivery, the mother was seized with a very violent shivering fit, of more than an hour's duration. This was followed by so great a degree of fever and delirium, as to create considerable alarm for her safety; and I was, in consequence, induced to order for her, an active cathartic, preceded by a dose of calomel, in a very few hours after delivery. From these remedies, a copious evacuation of very offensive dark coloured fœces was procured, which gave her great relief. Indeed it is probable, that the early exhibition of these purgatives saved her life, for her fever ran very high, and she continued in a very dangerous state, for seven or eight days. At length however she perfectly recovered.

Mrs. Jenkins, 22 years of age, in labour of her first child, was attended by a very experienced midwife. Her labour began on the 15th of November, 1808. During the first twenty-four hours, the pains were frequent but slight, the liquor amnii was then evacuated spontaneously, and the pains became very strong and frequent, but the child's head made little progress, in descending into the pelvis. My assistance was therefore requested on the 17th in the evening. This woman had been extremely ricketty when a child, and the pelvis was in consequence very much deformed.

I believed it necessary to have recourse to the perforator without delay, and having removed one parietal bone, I left her under the care of the midwife, that the pains might force the head, thus diminished, lower into the pelvis. At the end of five or six hours, finding that no apparent progress was made in the labour, I endeavoured to extract the head, by the help of the blunt hook, but could not finish the delivery without great difficulty.

At the beginning of the present year (1812,) I learnt, that this poor woman was again pregnant; and being convinced by an examination, to which, at my request, she now again submitted, that it would be impossible to deliver her of a living child at the full period of utero-gestation, I determined with her ready consent on performing the operation for inducing premature labour. Accordingly on Wednesday, March 4, 1812, I punctured the membranes in the evening, giving her afterwards a dose of tinct. opii. Labour pains came on, Monday, March 9th, and she was delivered of a live child on Tuesday, 10th, after about eighteen hours of very strong labour. The projection of the sacrum occupied so much space in the pelvis, as to produce a very marked depression of the right parietal bone, which did not recover its shape for four or five days.

At the time the operation was performed, Mrs. Jenkins reckoned that she had advanced about nine or ten days beyond the seventh month of gestation; so that the child, at its birth, must have been within a fortnight of eight months' growth. It is at present a thriving child; and there is great reason to believe, that it will be reared to maturity.

The practice of inducing premature labour, in cases of distorted pelvis, was first adopted in London, as is well known, about the year 1756;* when there was held a consultation of the most eminent practitioners of midwifery, "to consider of the moral rectitude of, and the advantages that might be derived from, the practice, which met with their general approbation."†

The morality of the practice, though it has been much questioned since this time, does not appear to have been doubted by these experienced practitioners. For the proposal was, that labour should be brought on at seven months, in those cases *only*, where it had been previously ascertained, that the pelvis was too much contracted, to allow a full sized fœtus to pass undiminished. By this operation, therefore, it was proposed to give a chance to the mother of bearing a living child at seven months, which must of necessity be sacrificed to her safety at nine months. The idea was probably suggested, by the success which had occasionally attended the practice, recommended by Guillemeau and others, of rupturing the membranes at an early period, in cases of profuse uterine hæmorrhage, during pregnancy.

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* The introduction of this method of practice has been erroneously attributed to Mr. Barlow, of Blackburn, in Lancashire, who published several cases of the issue of this practice, in 1800. It had been mentioned, by authors and lecturers on midwifery, long before his paper was published.

† Denman's Introduction to Midwifery, 4to. p. 395.

Objections to the morality of this practice, are much more frequent in the writings of foreign practitioners of midwifery, than in those of this country. Sue, Baudelocque, and Gardieu, all accoucheurs of great celebrity in France, decidedly object to it, not only because they think that the practice is contrary to the laws of nature, but because they say it is not to be depended upon, either for lessening the sufferings of the mother, or for saving the life of the child.* M. Gardieu tells us, that it lays the foundation for cancers and other dreadful diseases of the womb, and thinks that a woman had better run the risk of the Cesarean operation, or the division of the symphysis pubis, than submit to this operation.† The objections of these celebrated French accoucheurs, are plainly the result of a theoretical investigation of this method, for they acknowledge that they have had little or no experience of it.

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* Il y a déjà long temps que M. Petit a conseille et fait pratiquer l'accouchement prématuré dans le cas de difformité aux os du bassin. Il a meme proposé à ce sujet des moyens, dans le détail desquels ce n'est pas ici le lieu d'entrer, avec d'autant plus de raison, qu'il faudroit d'abord que les casuistes et les théologiens eussent décidé s'il est permis d'accélérer par art une fonction à laquelle la nature a assigné un terme fixe, et si on peut courir les risques de la vie incertaine de l'enfant, pour assurer celle de la mere. *Sue, Essais historiques sur l'Art des Accouchemens.* T. 1. p. 606.

L'accouchement prématuré obtenu par de semblables moyens, est toujours si peu favorable à l'enfant, qu'il nous semble qu'on ne devroit le permettre que dans ces cas d'hemorrhagies abondantes, qui ne laissent d'espoir de salut pour la femme que dans sa delivrance.

L'accouchement prématuré, si on le sollicitoit constamment au même terme, pourroit être aussi long, aussi laborieux, et tout aussi infructueux, même aussi impossible en quelque cas, que si l'on n'eut enterpris de délivrer la femme qu'au neuvieme mois. *Baudelocque, Traité des Accouchemens,* T. 2. p. 344.

† La femme . . . . . . est atteinte d'une inflammation de la matrice, qui est une suite du travail contre nature, et des efforts necessaires pour ouvrir le col, qui ne se trouve pas disposé favorablement: si elle ne succombe pas aux accidens primitifs, elle est exposée par la suite aux squirres, aux ulceres, aux cancers de la matrice qui lui rende la vie à charge, et lui fe-

The generality of writers admit the safety of the practice, as far as it regards the mother: perhaps the safety of the practice has been too generally admitted. Dr. Denman, in relating the particulars of a case which he attended with the late Dr. Savage, says, "on the following day, (after the evacuation of the liquor amnii,) she had a rigor, succeeded by heat and other symptoms of fever, which very much alarmed us for the event."* And a lady in the country upon whom this method was tried, was seized with severe shivering fits, followed by so much fever, as made her relations and medical attendants despair for some days of her recovery.† In the cases above related, one of the patients, Mrs. North, was for several days in a state of great peril. It may be alleged that the danger which she experienced, arose rather from the malposition of the child, requiring it to be turned in utero, than from the premature excitement of labour; but I am more inclined to attribute the severe shivering fit, which attacked her, to the latter cause, because shivering seems to be no unusual consequence of this operation.

Whether the death of the mother has ever occurred from this method of practice, I am unable to state positively. I have heard of three women who died in a few days after delivery thus artificially induced, and their deaths were attributed to the operation; but whether justly or not, I am not sufficiently acquainted with all the circumstances to judge. At all events, the method in question, if carefully conducted, cannot be more hazardous to the mother, perhaps is much less so, than the operation for lessening the head of the fœtus in utero,

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roient préferer d'avoir respecté la grossesse, au risque de s'etre exposée aux dangers qu'auroient pu lui faire courir l'une des deux operations [L'operation Césarienne ou la section du pubis] qui devient nécessaire pour operer la delivrance dans ces rétrécissemens extrêmes. *Gardieu, Traite d'accouchemens,* T. iii. p. 18.

* Introduction to the Practice of Midwifery, 4to. p. 398.

† Communicated to me by the lady's sister.

and it is incomparably less perilous than the Cesarean operation, or the division of the symphysis pubis.

The best defence of the practice, however, is derived from the chance it affords of preserving the life of the child. In the greater number of instances, indeed, the child will either be dead born, or will be born with so little life as to expire in a few hours; but in many cases the child has been preserved.

Dr. Denman, in his Introduction to the Practice of Midwifery, reports *twelve* cases of this operation, and adds, that the majority of the children were born alive, but does not mention the exact proportion.

Mr. Barlow, a surgeon of great respectability and celebrity at Blackburn in Lancashire, published in the 8th volume of the "Medical Facts and Observations," *seventeen* cases. Six of the children were dead born, and *five* others, though born with life, died in a few hours; but *six* were born alive and capable of living.* In the 4th volume of the "London Medical Review and Magazine" for 1800, were reported *ten* cases of this operation, with which I became acquainted, from their having occurred in the practice of my uncle, Dr. Merriman. *Four* of these children were born living, and likely to live. At the commencement of this paper, I have detailed *one* successful, and *three* unsuccessful cases; and I have further to report, from the information of my friend, Mr. Marshall, surgeon, of Half-Moon Street, Piccadilly, *four* other cases, *one* of which was completely successful. Thus out of *forty-seven* instances of distorted pelvis, in which this operation had been practised, at least *nineteen* children had been born alive, and capable of living.

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* Mr. Barlow has described the time when the operation should be performed, rather inaccurately. He says, "my method consists in exciting premature labour, *early in the seventh month* of pregnancy;" but he should have said *early in the eighth month*, that is *after the seventh month is completed. Early* in the seventh month, implies a time soon after the *sixth month is completed*, at which time there is no chance of the child's surviving, even though it should be born alive. That Mr. Barlow meant for the operation to be performed at seven complete months, is apparent from his afterwards saying, that "the child at *seven months* old has a sufficient chance of surviving the birth."

If it be considered, that in all these cases, the degree of distortion of the pelvis was so great, as to preclude the possibility of a fœtus at nine months of gestation passing alive, or undiminished, there is, I presume, sufficient proof that the practice is not only admissible, but that it ought to be recommended in such deplorable cases of distorted pelvis.

In most of the unsuccessful cases, the cause of the child's death was either not at all adverted to, or has not been made known; but this is a point that deserves attention. In many instances the death of the child seems to have taken place immediately after the severe rigors and fever, already alluded to, which attacked the mothers within a day or two after the liquor amnii was evacuated. It is possible that by proper management after the operation, these unfavourable symptoms may occasionally be averted. It appears likewise, that a preternatural presentation of the fœtus was a frequent cause of the child's death.

Dr. Denman does not take notice of any case of cross birth, among the twelve that he has recorded, but among Mr. Barlow's cases, there are at least two of preternatural presentation: in *two* of the cases communicated to me by Mr. Marshall, and in *four* of those which have occurred within my own knowledge, the presentations were likewise preternatural:—in all these cases, the children were dead born, probably from this cause. The proportion of preternatural presentations, according to this estimate, is about one in six.

It may be proper to enquire, whether preternatural presentations are equally frequent, in labours which occur spontaneously before the proper period? But the determination of this question requires more data than I at present possess. I have however now before me a list of *seventy-eight* labours occurring prematurely, either from the spontaneous action of the womb, or from accidental violence, and I find that among them, there were *seventeen* cases of preternatural presentation, viz.

7 of the nates,
5 of the feet,
3 of the arm,
1 of both hands,
1 of the funis,

but I should suspect that this gives a greater average of preternatural presentations, than commonly happens in premature labours occurring spontaneously.*

It has been a subject of enquiry, whether other circumstances, besides distortion of the pelvis, do not sometimes exist during pregnancy to make the inducement of premature labour expedient: as in cases of extreme weakness, or illness on the part of the mother, whose recovery seemed to be impossible if her gestation were suffered to continue; or in some of the more severe complaints peculiar to pregnancy, which were imagined to place the mother's life in imminent danger. An extension of the practice to such cases, has been strongly recommended, by a provincial surgeon of considerable eminence.

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* Authors are much divided in opinion, respecting the proportion of preternatural presentations of the fœtus, at the full time of gestation. Smellie estimates the proportion at 1 in 100. Professor Camper, of Amsterdam, from the documents afforded by Messrs. Titzing and Beckman, reckons them at not more than 1 in 150; and Professor Jacobs, in his "Ecole practique des Accouchemens," published at Ghent, in 1785, states the average of preternatural presentations at not more than 1 in 160. On the contrary, Dr. Bland, who has made the calculation with great exactness, from the registers of the Westminster General Dispensary, (Philos. Trans. Vol. LXXI.) states the average of preternatural presentations at 1 in 30; there having occurred in 1897 labours,

36 presentations of the nates,
18 . . . . of the feet,
8 . . . . of the arms,
1 . . . . of the funis.

If the average given by Dr. Bland, is what usually occurs, other authors cannot have been sufficiently accurate in their calculations: perhaps they only mean to speak of such cases of preternatural presentation as require extraordinary assistance. That they have omitted to enumerate many nates and feet presentations, is rendered probable from the following fact. Messrs. Titzing and Beckman, state the number of arm presentations in 18 years at 98, of the nates at 66, of the feet at 61. But it is well known, that nates and feet presentations are much more frequent than those of the arm; so that it cannot be doubted that many of the former must have been overlooked.

The exactness of Dr. Bland's calculations has been strongly confirmed, by the return of preternatural presentations, which occurred in the "Maison d'accouchemens," at Paris, during a period of nearly ten years, to May 31st, 1809. From this it appears, that upon an average preternatural presentations happened once in 27½ labours: of these

296 were presentations of the nates,
215 . . . . of the feet,
and only 60 . . . . of the superior extremities.

The number of labours from which the average is drawn, is 17,499.

This gentleman says, "the preservation of the child is obviously the primary object for the bringing on of premature labour, in the distorted pelvis; yet if the safety of the mother, under particular circumstances without distortion, should require similar means to be employed, with safety to the child, surely no good reason can be assigned, why they ought not to be adopted."

If indeed it could be proved, that the safety of the mother required such a mode of practice, and that the safety of the child would not be implicated by the operation, the argument might have some weight, but it seems hasty to assume that such is the fact.

Even in the case which the author adduces in support of this recommendation, it may be doubted whether the safety of the mother required this method of procedure. She was indeed teased with a very severe cough, and her stomach was so irritable as to retain no food whatsoever, nor even opium in a solid form. She had taken absorbents, stomachics, bitters, aromatics, and opiates, without experiencing any relief; liniments, fomentations, and blisters, had been externally applied without benefit, and she was thought to be sinking into her grave, when it was proposed, as a last resource, to bring on premature labour, six weeks before the full time, and the patient was delivered of a living child, and ultimately recovered.

Men in extensive practice in midwifery must be aware, that the state of irritability of stomach here described, occasionally takes place at all stages of pregnancy; that however severe it may be, the complaint frequently ceases before the termination of the pregnancy, and that very small quantities of simple diet, containing but little nourishment, and nothing stimulating, will, under such circumstances, support the mother for an inconceivably long space of time, without destroying, or injuring the fœtus. It may likewise be remarked, that this state of irritability of stomach is generally connected with more or less of inflammatory action, either in that viscus, or in some of the neighbouring parts; to relieve which, bleeding is perhaps, of all others, the most appropriate remedy: while cordials and aromatics serve but to aggravate the complaint. Now as the patient in question took remedies of the latter class, while the former appears to have been neglected, I think this case cannot be held up as a proof of the necessity of resorting to this expedient.

Writers of the best authority have remarked, that in acute and dangerous diseases, the spontaneous occurrence of abortion or premature labour adds greatly to the danger of the patient. This is a strong reason against exciting premature labour by art, during the continuance of such diseases. And though the practice of inducing premature labour in cases of distorted pelvis has rarely been attended with alarming consequences, yet I apprehend that I have mentioned enough to show, that there is no absolute freedom from hazard, even when the woman's health may be called good at the time of the operation; and how much the degree of hazard must be increased, when the patient is already in a state of great danger, need not be insisted upon.

As to the safety of the practice with regard to the child, that likewise seems to be assumed upon no very substantial grounds; at least if we may judge of the probability of saving the child, from what has happened in cases where distortion existed, we shall not have much encouragement, so far as the child is concerned, to extend the practice to such cases. If indeed the majority of the children had been preserved, something might be said in support of the operation; but it seems, that only *nineteen* children were born alive, and *capable of living*, out of *forty-seven* instances of the experiment.

These are indeed sufficient to justify the practice, when there is a moral certainty that the child's life must be inevitably lost, unless this mode be adopted; but there does not exist the same reason for resorting to it, when the child's life is not so certainly exposed to danger.

Upon the whole it appears to me, that the advantage either to mother or child from such an extension of this practice is extremely problematical, while to admit of it would be opening a wide door to a dreadful abuse of the operation, by the ignorant, or the unprincipled. I must take leave therefore to express my humble opinion, that the inducement of premature labour by art ought to be strictly confined to those melancholy cases of distorted pelvis only, for which it was originally recommended.

In order to guard against any abuse of this method of practice, it seems expedient, that some fixed rules of conduct should be observed respecting its adoption. What these rules ought to be, I do not presume to determine, but shall content myself with subjoining such limitations and cautions as appear to me to be indispensable.

1. As the primary object is, to preserve the life of the child, the operation should never be undertaken, till *seven complete months* of utero-gestation have elapsed; and if the pelvis of the mother be not too much contracted to allow of it, the delay of another fortnight will give a greater chance to the child, of surviving the birth.

2. The practice should never be adopted *till experience has decidedly proved*, that the mother is incapable of bearing a full-grown fœtus alive.

3. It is sometimes necessary to have recourse to the perforator in a first labour, though there may be no considerable distortion of the pelvis; therefore the use of this instrument in a former labour is not *alone* to be considered as a justification of the practice.*

4. The operation ought not to be performed, where the patient is labouring under any dangerous disease.

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* The propriety of inducing premature labour in any deformed woman can rarely, if ever, be determined upon, before the crotchet has been found indispensably necessary, and actually employed in a previous labour. Indeed, unless the contraction of the tube or canal of the pelvis be very considerable, and pretty accurately ascertained, it will scarcely be justifiable in any case to have recourse to this practice in all the subsequent pregnancies, until the woman has been delivered a second or third time by the crotchet. For it has happened in a very great number of instances, that a woman who has been delivered of her first child by the perforator and crotchet, has been afterwards delivered [naturally] of one or more living children at the full time.—Hull's Translation of Baudelocque's two Memoirs on the Cesarean section, p. 49.

5. If upon examination, before the operation is performed, it should be discovered, that the presentation is preternatural, it might be advisable to defer it for a few days, as it is possible, that a spontaneous alteration of the child's position may take place;* particularly if the presentation be of the superior extremities.

6. The utmost care should be taken, to guard against the attack of shivering and fever, which seems to be no unusual consequence of this attempt to induce uterine action, and has often proved destructive to the child, as well as alarming with regard to the mother. The peculiar circumstances under which the operation is performed, and the habit of body of the patient, will determine the accoucheur either to adopt a strictly antiphlogistic plan, or to exhibit opiates, or antispasmodics and tonics.

7. In order to give every possible chance for preserving the life of the child, it will be prudent to have a wet-nurse in readiness, that the child may have a plentiful supply of breast milk from the very hour of its birth.

Lastly, *a regard to his own character should determine the accoucheur, not to perform this operation, unless some other respectable practitioner has seen the patient, and has acknowledged that the operation is advisable.*

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* Such alterations in the position of the fœtus in utero have been known to happen. Dr. Denman has known more than one instance of the presentation of the head being exchanged for the arm. Introd. to Midwifery, p. 450. Mr. Burns mentions a case where the shoulder was exchanged for the head, Princip. of Midwifery, p. 218. Dr. Merriman, senior, was about to puncture the membranes in a woman who had a distorted pelvis, when he distinctly felt the child's hand through the membranes, just within the os uteri; he therefore deferred the operation, and at the end of three or four days, examined again, and discovered that the hand was retracted and that the head presented. He now performed the operation, which was completely successful. Silber tells of a case in which the elbow presented, but in thirty-six hours, the head occupied its place. "Pater meus explorans per vaginam Fœminæ adpariendum vicinæ, cubitum fœtus prolapsum, et per integumenta caput in dextro matris latere invenit: nihilominus tamen post horas triginta sex, aquis effluxis caput situ naturali ingressum est."—Silber de viribus naturæ medicatricibus in situs fœtuum iniquos Tubingæ 1799.

Other such cases are to be met with in authors.

SELECTED REVIEWS.

A Treatise on the Management of Infants; containing the general Principles of their Domestic Treatment, with the History and Method of Cure of some of their most prevalent and formidable Diseases. By John Syer, Surgeon. 8vo. pp. 295. London, 1812.

[From the London Medical Review, for January, 1812.]

From a statement given by the Directors of the British Lying-in Hospital, it appears that during nine years, about the middle of last century, of every fifteen children born in that hospital, one died; and that during the same space of time, at the latter end of the century, only one out of one hundred and fifteen. No further proof can be wanting of the extent to which the amount of mortality is influenced by treatment. The present bills of mortality show that of all who are born in London, one third die before they are two years old. Nothing more can surely be necessary to prove how much remains to be done towards the preservation of early life. This important object however, will not be much furthered by the mere multiplication of books. There is a feeling which is continually deluding us into the publication of what is known before. We discover in the progress of experience, that we have acquired information which we had not at the commencement of our practice, and are erroneously led to think that what is new to us must be new to the profession. Generally however, the fact is, that whilst we have been out-growing the knowledge of our youth, we have only grown up to that of our well informed cotemporaries. There is much reason to believe that physicians, even those of extensive practice, see little more of the diseases of children than what is sufficient to give them a thorough knowledge and a practical command of the truths ascertained by their predecessors. The same opportunities for observation will generally lead to the same results, and men of equal powers of mind, who enjoy the same quantity of experience of the same class of diseases, although they live at opposite ends of a century, will generally deduce the same opinions, as far at least as the main truths are concerned. We are thoroughly aware, that men will bring to the investigation, different degrees of previous knowledge, whether arising from the different states of science, or different degrees of industry or education; different descriptions of mind, different qualities of talent, and different degrees of interest in the subject; from all which it will happen, that one may extract many valuable discoveries which another had neglected. We only intend to urge, that the most effectual way to increase our knowledge, is to extend our notice to a larger field of observation; that the travellers who successively explore the same extent and district of a country, will produce similar accounts of the inhabitants and the scenery, although some who follow them over the same track, more deliberate and wandering in their movements, may digress to the right and the left, and bring home with them the description of some curious trait of character, some minute peculiarity of manner, or some fine feature of country, which had escaped the notice of their more cursory predecessors.

This treatise on the far from exhausted theme of infant preservation, which we now proceed to introduce to the attentive consideration of our readers, is divided into two parts; the first relating to the domestic management of healthy children, the second to some of their diseases. It does not profess to contain any important innovation into the usual practice of our best physicians, but seems to have been intended chiefly to teach the heads of families how to rear their children, and to detect and ward off the first approaches of disease. In the first chapter, Mr. Syer regulates the treatment of infants immediately after birth. Is it not too unqualified to state, that some time should be allowed to pass before the infant is separated from the mother, to allow of the gradual accommodation of the infant to the respiratory change of life, when it betrays signs of languor and imperfect animation. It frequently happens that the same uterine contractions which had expelled the child, had separated the placenta; and in this case, a languid and half animated infant could receive through the chord nothing but impure blood, and consequently nothing but detriment. This is strongly, and we think justly urged by the professor of midwifery in the University of Edinburgh.

In the treatment of the inflammatory affections of infants, leeches are an indispensable but a very costly remedy. Among the children of the poor they are continually omitted, because of their expensiveness, and the consequent detriment is incalculable. The present race of leeches has surely degenerated from their ancestors. Now they almost always die after their first employment. We knew an old lady who had preserved for several years one of the leeches of former times, which was of a most formidable size and activity; she tended it with the greatest care, and was continually lending it to her friends. It had attended on so many patients, performed so many cures, and throve so well under the employment, that it was nick-named the doctor. The dearness and the feebleness of the leeches which are commonly procured, make the following contrivance of great value. " A very ingenious contrivance (says Mr. Syer) has been effected by Mr. Whitford, surgeon's instrument-maker, near Bartholomew's Hospital; the instrument is a scarificator, with a single blade, which is projected by a spring, on a similar principle nearly to the common scarificator, which is too clumsy and inapplicable to many parts. As soon as the puncture is made, a small exhausting syringe is applied to the part, and by increasing the number of punctures, the surgeon is at liberty to draw almost any quantity of blood he may choose." There is a further convenience in this instrument, that on applying the exhausting syringe to the wound inflicted by the leech, after it has ceased to bleed by the ordinary process, we may easily obtain a further discharge, and very rapidly, according to the exigency of the case. This instrument, if equal in efficacy to its apparent ingenuity, which we have reasons to doubt, must be not only a far cheaper but a far more efficacious remedy than leeches, which are continually disappointing the physician, to the serious injury of the patient.

The purulent ophthalmy of new-born infants, considered in the fourth chapter, has been supposed to arise from the mother being, at the time of delivery, affected with fluor albus, the discharge of which is supposed to come in contact with the infant's eyes in its passage through the vagina. The remedies here recommended are Goulard water, local bleeding, blisters, purges, and the camphorated water of Bates's pharmacopœia. The practice in this alarming and destructive disease, which was pursued by Mr. Saunders, and is still followed at the Infirmary for diseases of the eye, is said to differ very essentially from that recommended by Mr. Ware, which was found very inefficacious when applied to the extensive practice of that institution.

Inward fits, often announced by nurses to alarm the timid and inexperienced mother, are by Mr. Syer admitted into the catalogue of infantile diseases, and represented to consist of an involuntary or convulsive movement of the muscles of the eye and mouth, arising from flatulence, or other irritating cause in the stomach or upper bowels.

Of the two chapters in which the diseased state of the system during the progress of teething is described, the second is particularly worthy of attention. At this period of life, such a quick sympathy, such a telegraphic communication, subsists throughout the constitution, that irritation can scarcely go on in any part without rousing the whole into a state of alarm. Hence, when the teeth are making their way through the gums, there arises at various times an almost infinite diversity of symptoms. The infant commonly becomes fretful, the cheeks red and hot, the saliva runs from the mouth, a small vesicular, and sometimes an herpetic eruption appears about the face, or behind the ears; the skin is hot, the infant restless, the pulse quick, 130, the tongue white, the stools sour, sometimes thin and green, sometimes yellow and slimy, sometimes slate-coloured. Diarrhœa is very common. Sometimes there is cough and tightness of the breathing, arising from an affection of the mucous membrane of the lungs. The sleep is disturbed by startings, convulsions sometimes arise, and sometimes the action about the gums induces so great a determination to the head, as to produce complete hydrocephalus internus; sometimes the glands in the neck become enlarged; sometimes a secretion from the urethra in both sexes; and sometimes fever remarkable for the suddenness, the severity, and the shortness of the paroxysms. One of the most important maxims to be kept in view, in observing and treating the diseases of teething, is that, although originally symptomatic of the irritation in the gum, many of them are capable of taking on an independent existence, assuming as great a degree of severity, and requiring the same treatment as if they had been idiopathic. This is most true and most important, as it applies to the symptomatic affections of the lungs and head. A cough and tightness of breathing, or an intense pain of the head, although they may appear to originate in an advancing tooth, must not be inferred to be harmless, but ought to be closely watched, for fear the one should go on to hydrocephalus and the other to pneumonia.

In the chapter on vaccine disease, Mr. Syer draws a contrast between it when received directly from the cow, and its mildness when imparted by inoculation; and proposes, that if the failures in its preventive efficacy should become more numerous, we should revert to the original source for communicating it. "In the vaccine distemper," says Mr. Syer, "it is a point of the first consequence to communicate the infection in a perfectly limpid state, and by no means to trust to the ichor after the ninth or tenth day. The characteristic appearances of the cow-pock cannot be anticipated, nor an equal degree of security against the subsequent influence of small-pox contagion; and a danger is incurred of producing abscess, ulceration, and a considerable degree of general irritation." Mr. Bryce, of Edinburgh, who has had great experience of the inoculation of this disease, and who has given us one of the best publications on this subject, is so far from entertaining these notions, that he employs the scab, into which the vesicle is at last converted, dissolved in water, for inoculation.*

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* The security and certainty of the vaccine scab or crust, is fully ascertained in the United States.—EDITORS.

Mr. Syer very properly advises that the two punctures which are usually made, one in each arm, should both be made in one arm, so that friction of the arm affected in suckling the child, which is sometimes apt to induce painful consequences, may be prevented. Humboldt, in his Essay on New Spain, says that the men who are employed to take care of the cows on the mountains of Mexico, have been long known to be subject to a mild kind of small-pox, caught from the teats of cows, which renders them incapable of catching the more malignant form of this disease.

To each of the following subjects, viz. varicella, or chicken-pox, catarrh, with inflammation of the mucous membrane of the lungs, croup, hooping-cough, intestinal worms, the remittent fever, arising from a particular state of the digestive organs of children, Mr. Syer has devoted a chapter, but nothing occurs in them demanding particular notice. In the succeeding chapter, 17, rickets are described. The symptoms of this disease are well known; flabby flesh, large head, swollen belly, flattened ribs, sharp sternum, crooked legs, swelled joints, and curved spine. Examination after death shows the liver to be enlarged, but otherwise healthy in structure, the mesenteric glands to be tumefied, the abdomen tympanitic, the brain soft and moist, the bones vascular and resembling cartilage in structure. All the phenomena of this curious disease seem to originate in an imperfect performance of the process of assimilation. There is not merely a deficiency of the earthy portion of the bones; all the solids of the body are imperfectly formed.

Boyer asks, is the influx of phosphate of soda prevented by the obstruction of the mesenteric glands? Does the chyle contain less phosphate of lime? The former query will be sufficiently answered by referring to the phenomena of tabes mesenterica; because, if enlargement of these glands was capable of opposing the supply of earthy phosphate in a sufficient degree to produce softness of bone, tabes mesenterica would never occur without being complicated with rickets. It is probable, that whatever quantity of earth was contained in the blood, it would not be deposited in the bones, because those vessels in the osseous structure, which ought to perform the office of selection and deposition of the necessary parts from the blood, are in this disease incapable of their natural functions. It was from a similar notion to that of Mr. Boyer, that the disease arose from a deficiency of earthy phosphate in the chyle, that M. Bonhomme instituted those experiments which he has printed in the eighteenth volume of the Annales de Chimie. He took several chickens of the same brood, and with the food of some of them he mingled phosphate of lime. When they had been fed in this way for a month they were all killed, and it was found, on examining their bones, that in those which had consumed most of the phosphate of lime, the process of ossification had advanced the furthest; hence he was induced to give the same substance in rickets. The efficacy of this practice is obviously however undecided. Frank says* that those were ricketty children which, in the fifteenth century, were believed to be the productions of a devil and a witch; and that it was thought right to drown them, or otherwise to destroy them. It is commonly believed the disease was never known until a few years before Glisson wrote about it, in 1650; how long it had been known before, it may be difficult to ascertain, but there is much reason to believe that it had been distinctly described under another name long before the period when Glisson wrote; for Zeviani della Kachetidi says that Hieronimus Reusnerus published a Dissertation in 1582, in which he described a disease, in his time very familiar in Holland, among children, of which the remarkable symptoms were wasting, crooked limbs, and flat sharp chests.

In the treatment of this disease, one of the most important things to be attended to is to expose the limbs to few causes of deformity during the softness of the bones, until they have been restored to their proper degree of firmness: for this purpose the child ought to be kept, for the principal part of the twenty-four hours, in the horizontal posture. Boyer advises a curious remedy: tickling so as to produce hearty laughing, which he says agitates all the viscera of the chest and abdomen, quickens the circulation, and gives a stimulus to the functions of the stomach and bowels. This is making a new use of the old advice, laugh and grow fat.

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* Delect. Opusc. Med. tom. 5. p. 305.

We take leave of Mr. Syer, with a very favourable idea of his publication. It will be read with advantage by all, but it will be more particularly useful to those unprofessional persons who have children under their care, as it contains all the important information, more clearly and pleasingly communicated than in any other publication with which we are acquainted.

We wish for a compendious account of the symptoms, diagnosis, and treatment of all the diseases of children, in the same way as Dr. Pemberton has considered the diseases of the abdomen. The chief part of that gentleman's publication is old information, more briefly, clearly, and distinctly told than ever it had been before. It has sold so well, and is so often consulted, not because it discloses much of which we were ignorant before, but because it contains information of frequent use in an eminently convenient form. We are convinced such a work would succeed, for we have at present nothing of this description. Underwood is so mawkishly diffuse, and Dr. James Hamilton's Hints on the Diseases of Children, and the account which Mr. Burns has affixed to his System of Midwifery, are both, in the first place, connected with other matter, and in the second place are not sufficiently eminent for clearness and distinctness.

Reports on the Spotted or Petechial Fever, made to the Councillors of the Massachusett's Medical Society on the 21st of June 1810. Boston, 1810.

[From the London Medical Review, for January, 1812.]

America seems to be the country of epidemics as much as it is of woods, swamps, and savannahs. In the beginning of the year 1804, a very singular, alarming, and at its first appearance a very fatal disease broke out in Dana, a little town in the county of Worcester, and afterwards spread to Peterham, Barnes, Oakham, Rutland, Paxton, Hardwick, New Braintree, Brookfield, Spencer, Sturbridge, Winchendon, Athol, Gerry, Leicester, and Worcester, all in the same county. It also extended itself to the counties of Cambridge, Middlesex, and Hampshire. The people of America have been frequently so hardly scourged by epidemic diseases, as to render it no subject of surprise that they were thrown into a state of considerable alarm at this apparent addition to the number of their relentless destroyers. A committee therefore was appointed by the Massachusett's Medical Society, who met on the 27th of March, 1810, drew up a circular letter, containing a number of queries relative to the symptoms, causes, treatment, and fatality of the disease, which was sent to all the medical men practising in the districts in which it had shown itself. From the various letters received in reply, the committee, who met again in June, drew up a report, consisting of the statements of their correspondents, together with their own comments on them. The latter is far from forming the most valuable part of the report.

This disease, which has obtained the name of the spotted or petechial fever, although it attracted public notice, and excited general alarm for the first time in 1810, is said to have appeared so long ago as 1806, at Mudford, in New England; to have been at that time described in the published papers of the Massachusett's Medical Society, and to have been since March, 1807, epidemic at Hartford and Windsor, in Connecticut, and in the counties of Hartford and Litchfield. "Most of the country in which this disease has appeared is inland, and very elevated; it abounds with hills and valleys, has many ponds, running streams, and fresh water rivers. In Cambridge port, the first place near the sea coast at which it was observed, it was confined for the most part to the land which was recently salt meadow, and which is now intersected by many foul ditches. In Boston, this disease, as also typhus, has occurred most frequently in those parts of the town exposed to the flats and water."* It began during the cold weather in the middle of January, and although it became much milder in its appearance, and much less fatal in its termination, had not ceased in June, when this Report was ordered to be published. The summer before the first irruption of the disease was remarkably cold. The autumnal months were unusually warm and pleasant, a little snow fell early in November, and at the latter end there was a severe snow storm. The weather however, from this time to the middle of January, was very calm, warm, and foggy, with wind often from the south-west. In the middle of January there were a few cold days, but afterwards the weather was moderate, like spring, till the nineteenth, when there was a high wind, and a few days afterward some bitterly cold weather. From this time, through the remainder of January, the weather was very cold. During this month, little snow fell. February, at the beginning was cold, towards the end more mild, and there was very little either of rain or snow. In March it snowed seven days, and once very heavily, and there were several days of unmixed rain. It was a pleasant, but a cold month. April began with snow and rain; the remainder of the month was very dry. The weather was clear, mild, and pleasant; winds from the east; at the end there were some thunder and showers. The month of May was fair and clear, and, excepting a few showers, very dry; wind mostly south and west. During the latter part of the month, the weather was sultry, and the wind south and south south-west.

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* See Reports.

There appears to have been a remarkable difference in the fatality of this fever, when it first appeared, and the mildness which it afterwards assumed; for, at its breaking out, it proved fatal in a very large proportion of the cases, but subsequently it does not appear to have destroyed above one in fifty; according to some statements, not above one in a hundred. We will endeavour to give our readers as distinct a notion as we can of the symptoms of the disease, although it appears to us that we have not to thank the Reporters for rendering this task an easy one. The people who furnished them with the information were, unless we are much mistaken, not very remarkable for clearness of observation, and the Reporters have not tended to diminish this obscurity by the use which they have made of them. They appear never to have seen the disease themselves, and in order to give what they considered a full account of it, have mingled together, in their own way, the information which they drew from various sources into a kind of olla podrida, a thick soup of various ingredients, which costs little, fills out, but is by no means light and easy of digestion.

The disease comes on suddenly. Almost all its symptoms indicate a remarkable affection of the sensorium and of the circulating organs; thus, a few hours after the attack, many of the patients became dimsighted, or even blind, benumbed, or paralytic, delirious or comatose; sometimes, although more rarely, they were affected by spasms and convulsions; they complain of pains of various descriptions, which is almost wholly confined to one side. The head is affected with pain, sometimes almost intolerably violent. The skin becomes chilly, dry, and pale; the eyes glassy, the nose contracted, the face livid, and the countenance expresses great distress and dejection of spirits; the body becomes cold, the breathing laborious, the pulse small and feeble, slow at first, and very frequent afterwards. About the region of the stomach there is a sense of oppression and fulness; often eructation, nausea, and vomiting. After these symptoms have continued a short time, they are succeeded by others of a different description: the pulse becomes full, the skin warm, the face flushed, the respiration short and difficult, the eye-lids swell, the eyes become staring, and the head labours with a throbbing pain, and the mind becomes delirious. When the fever terminated fatally, (and when this was the case it occurred within two days from the beginning of the attack,) the skin became pale and cold, the pulse quick, small, and irregular, the respiration very laborious, the flesh flabby, and petechiæ appeared over the whole body; the patient became drowsy, unable to swallow, and breathed quick and laboriously just before he died. When perspiration occurred, to which there was in many of the cases a great tendency, it was very profuse, and often fœtid. The common opinion was that the fever was not propagated by contagion; blacks were not exempt from it, but it seldom attacked the very young or the very old. After death, the body, particularly the face, neck, and shoulders, became covered by purple spots, and wherever the skin had been removed by blisters, the surface was very dark and covered by blood. On removing the cranium, the dura mater was commonly observed to pour out blood, a serous fluid was found under the dura mater, the longitudinal sinus was full of blood, the veins of the pia mater were very turgid; between the tunica arachnoides and pia mater, there was an opake fluid, which sometimes had the distinct appearance of coagulable lymph. The hemispheres of the brain adhered along their upper edge. The cortical part of the cerebrum was unusually pale, the blood oozed from the medullary in more than common quantity. In the lateral ventricles there was more water than natural, and the plexus choroides was thick and hard, and seemed pale, as if from being soddened in the fluid of the ventricle. Of the heart, the outer tunic, the valves, and the inner lining, were thickened and altered by the deposition of lymph; both the right and the left ventricle, as well as the right cava, contained a little black blood, and even the aorta was gorged with the same fluid. The abdomen was very free from visible disease: the liver however, was unusually livid, the gall-bladder held some dark and ropy bile. All the muscular parts of the body were remarkable for a great lividness of colour. The bodies were never examined later than twenty-four hours after death, and were perfectly sweet.

The following case will afford our readers a more distinct notion of the symptoms and progress of the fever than what can be obtained from any general description. A middle-aged woman, of temperate habits and robust health, was seized with symptoms of the epidemic fever, which she had greatly dreaded, on the 25th of March. She was very anxious, agitated, and sighed much, and had slight rigors. On the right cheek there appeared some swelling, and a few pimples; the eyes lost their natural lustre, the skin became dry; the pulse preserved its natural velocity, but in the left wrist it was feebler than in the other. The left ankle, knee, elbow, and shoulder, were very painful, with that sensation of numbness and pricking popularly called pins and needles; the fingers felt numb, as if from frost. Two hours after the attack, the head was seized with a violent pain; stomach affected by fulness and eructation. These were the symptoms during the first day. The feet were put in warm water, and the parts affected with pain were bathed with oil, ammoniated water, and tincture of Spanish fly. The pain and numbness being relieved by the friction with this liniment, she was put into a warmed bed, supplied with very hot brandy and water, and mint and pennyroyal tea, and felt better for them. After a short time however, the pain and numbness returned. Two tea-spoons full of camphorated spirits, and one of sulphuric æther, were now given her in hot water; a sinapism was put to the left foot, the side in which the pain and numbness resided, and a jug of boiling hot water to the right foot. The numb and painful parts were again bathed with the ammonia and tincture of Spanish fly. As the rigors continued, in spite of the warmth of the bed, a warming-pan full of coals was introduced between the blankets, and kept moving about; this relieved the rigors, and produced perspiration. About nine o'clock at night (the first day of the disease) the pain of the head became very violent, and it appeared as if delirium would supervene; she pulled off her cap with violence, and called for camphorated spirits to bathe her head with. Æther dropped on her forehead produced a grateful coolness, and relieved the head-ache. Hot billets of wood were introduced into the bed, to keep up heat and perspiration of the body, and whenever the pulse was sunk, the hot brandy and water was given her. About one o'clock in the morning the symptoms appeared mitigated, and perspiration was flowing. During the remainder of the night she was tolerable quiet; she continued to perspire; her pulse varied, but whenever it sunk it was readily restored by cordials. The pain remained in some degree. The tongue was dry in the middle, with moist edges. The next morning, that is, on the second day of the disease, a large blistering plaster was applied to the neck, and external heat and the cordials were ordered to be continued when they were necessary. At seven o'clock in the evening the blister in the neck had drawn, the head was relieved, and the mind was free from delirium. Wine whey, acidulated with lemon juice, was ordered. On the third day, in the morning, she was much better; the perspiration had been kept up, the forehead felt painful and light, and the stomach oppressed with fulness. The same liquids were ordered to be continued, with the addition of beef broth. In the evening she seemed doing well; the pulse in the left wrist was fuller than that in the right; there was great tendency to perspiration; she had taken a draught of cyder, which had relieved the fulness of the stomach. There was an itching over the whole surface of the body. A laxative was ordered. On the morning of the fourth day, she was found to have passed a good night; her bowels had been opened; her pulse was natural; she was able to sit up most of the day. A numbness at the ends of the fingers, and general weakness, were the only remains of her disease. From this time she continued to recover. It is curious that she had been nursing at the time of her attack, and did not lose her milk.

In the treatment of this disease all evacuations appeared to be hurtful, excepting by the skin. The gentlest means of moving the bowels, as enemas, only were admissible. The best remedies were sudorifics, as opium and ipecacuanha, and the best practice to keep up perspiration and the action of the arterial system, by the warm bath, warm bed, thick blankets, bottles of hot water in the bed, sinapisms to the feet, and by giving the patient cordials, such as hot wine whey, wine and water hot, brandy and water, æther, opium. When the perspiration was very profuse, it was thought right to check it, by rubbing with hot dry flannel. In some cases, in which there was an uncommon degree of torpor and feebleness of arterial action, the use of spirit was carried to an uncommon extent, with the most encouraging benefit. Two pints of undiluted heated brandy have been given to one patient in twelve hours. In the lethargic state, what often appeared the most efficacious remedy, was fifty or even a hundred drops of laudanum, given every half hour, until it produced the desired effect. For pain of head, which was often very intense, and flushing of the face, and delirium, the most effectual means of relief was the application to the head of cold water, or snow, or ice, or æther, and a blister to the nape of the neck. The incessant vomiting which sometimes occurred was relieved by blisters to the precordia. During the convalescence, the medicines employed were bark and Griffith's steel mixture.

Such is the account we have hitherto received of the epidemic called the spotted fever, which last year spread so extensively in the county of Worcester, and which excited so much alarm in the minds of the public. What has been its subsequent progress we have not learned. The prevailing opinion among the medical men was, that it was not contagious; and of the places where it appeared, there was only one, Cambridgeport, the peculiarities of whose situation gave any probability to the idea that it arose from the influence of marsh effluvia.

ORIGINAL PAPER.

Case of ruptured Uterus, with the appearances on dissection.

By Dr. Milton Antony, of Monticello, Jasper County, Georgia.

To the Editors of the Eclectic Repertory.

Gentlemen,

I have the satisfaction of recording and transmitting to you, a case of ruptured uterus, which, if, on account of the merits of the case simply related, or on account of any observation which may accompany it, you should deem worthy, you are welcome to admit to a place in your Repertory. The recording of rare cases, as well as those on which some theorising mind may be brought to anchor, and thereby develop, probably, the most lucid physiological theories, is a duty I recognize as being incumbent on all members of the faculty, with which I haste to comply.

A woman slave, the property of Mr. H. in this village, who had the character of being very deceptious, complained, on the 25th, 26th, and 27th of March, 1814, (after being somewhat miff'd by her mistress,) of pains in her hypogastric region, with an internal hardness, which, she told her associates, she could feel with her hand. Her pains were somewhat periodical, resembling labour pains, accompanied with a sense of weight and oppression about the seat of the uterus. Mrs. H. believed the woman was about to abort, but she most strenuously denied the charge of pregnancy. It was then the conclusion that she was deceptive, and no farther notice was taken of her case, although she continued complaining, sometimes on foot, and sometimes in bed.

On the evening of the 26th, she informed a woman with whom she associated, that she believed she had miscarried; that she had some show which induced in her this belief. On the morning of the 27th, however, she arose and attended to her business as usual, got breakfast, and in the course of the forenoon took her bed again, and made much complaint;

her mistress still believing her deceptive. Her mistress' husband being from home, she applied to her brother-in-law and family physician, Dr. S. The doctor attended the call. Mrs. H. informed him of the illness and the disposition of the woman, and of her professions of corporeal illness, and begged the doctor in the afternoon to step into the kitchen and examine her. The doctor went into the kitchen, and to his utter astonishment, he found the woman dead.

In compliance with the request of the family, and in gratification of my own desire, I attended, and made an investigation by the knife, into the cause of her death. I commenced the dissection by making crucial incisions into the abdomen: one in the direction of the linea alba, from the xiphoid cartilage to the os pubis, the other transversely from the left to the right iliac region, intersecting the former at a right angle, in the umbilical region. No sooner had I penetrated the cavity of the abdomen, which was considerably distended, than a large quantity of fluid blood made my incision its way of escape. After this, I removed large coagula of the same substance, amounting, in the whole, to between twelve and sixteen pounds of blood. Immediately on the removal of those coagula, I was presented with the chorion, which I found containing the fœtus, and liquor amnii. On removing this sack of liquor a little from its position against the walls of the abdomen over the pubis, I found the lacerated edges of the uterus. I then dissected around, so as to save the uterus, Fallopius' tubes, the ovaria, and part of the vagina, which preparation I have now preserved in a solution of nitre in common brandy. I inclose you a rough painting of this preparation, which will, at least, serve the purpose of making the case plain to every inspector, showing coarsely, though correctly, the true condition and position of the preparation, as I now have it.

This preparation, as it shows the callous portion of the uterus, must readily explain the cause of the rupture. I do not recollect to have seen a record of a similar case, although Baudelocque, from his expressions in his 1440th paragraph, seems to have acquaintance with them, so that I do not record it as perfectly novel in the annals of medicine, but as a rare case; a case whereby physicians may be enabled to make correct prognostics, but more especially as being instrumental in the confirmation of a correct theory of parturition, or rather, of the true cause of the determination of the period for parturition to nine months from the time of conception. With Baudelocque I agree in considering "the determining cause of labour any thing which is capable of exciting the contractions of the uterus," such as the growth of the fœtus, and the accumulation of liquor in the cavity, "and that the true cause of labour at the full time, resides in the uterus." But these do not account for the determination of labour to the end of the ninth month. In accounting for the procrastination of the period of labour to the end of the ninth month, I cannot acquiesce with the learned accoucheur,* in supposing only, that the action of some fibres are counterbalanced by the resistance of others; although it is an indubitable fact, that the fibres which constringe the os tincæ, until the end of the ninth month, counterbalance the contraction of the parietes of the uterus; but the reason why that counterbalances this is, that the latter is not, until the end of the ninth month, thrown into such powerful contraction, as to be effective of labour. It is a law of the uterus, that its substance is so expansible as to admit of a certain degree of expansion without being irritated; an expansibility whereby it yields to the distending force within, to a certain extent. This extent is not, of itself, sufficient to accommodate the uterus to the growth of its contents, which accommodation is effected only by the assistance which the dilatation of the cervix gives, more than the simple elongation of its fibres from the distending cause within. So long as the cervix continues to widen, and the uterus to expand in their accustomed ratio, so long is the fœtus accommodated, and so long does the substance of the uterus remain free, (or nearly so,) of irritation. But so soon as the cervix has opened to the os tincæ, and the parietes of the part which formed the cervix, have become extended to the same degree as other parts, and the cavity become spherical, the usual relief which was afforded from this source ceases to be given. The effect of this cessation is, that an additional requisition is made of the parietes of the uterus, for a degree of expansion incompatible with its laws, and out of its power to grant. Consequently, the contents of the uterus enlarging in their accustomed ratio, and the fibres of the uterus not expanding in their accustomed ratio, the former becomes an irritating cause to the latter, and thus the (now) offending cause excites its own expulsion, by exciting those actions which constitute labour. Dr. Motherby's words nearly coincide with mine, differing only in his considering the neck of the uterus as containing a store of folded fibres which are given up to the uterus in proportion as expansion is wanted; which fibres had been closely stored away for this purpose; he considering the only assistance the neck gives, to be that of giving expansible fibres to the uterus as they are wanted. Whereas I consider, in addition to this, a relief given merely by the widening of the parietes of the neck, which were before very closely approximated, forming, in the commencement of pregnancy, a narrow appendix to one point of the triangular cavity in the body of the uterus, a collum equally narrow at its junction with the triangular cavity, as at the os tincæ. See fig. 3. pl. 5. Smellie's Tables. My idea will here be more easily conceived, by imagining the cavity of the uterus and neck to pass, during the progress of gestation, from the primitive triangular shape of that viscus, through that of a common receiver, (the way from the os tincæ to the triangular cavity, forming the neck of the receiver,) to a sphere. See Smellie, Pl. 5, fig. 3; pl. 6, fig. 1; pl. 7th, 8th, and 9th. By those plates it is very clear, that that part of the collum next the cavity of the uterus gradually widens, thereby giving space without actual extension or elongation of fibres, and thereby increasing the cavity of the uterus, as the legs of a plane angle, beginning at parallel lines, gradually widening, increase the capacity of that angle, till the angular point becomes a part of the plane.

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* See Dewees' edition, sect. 416.

I will now proceed to a statement of the cause of death in the case, of which I have preserved the preparation. The woman was about middle aged, and had had three children previous to this pregnancy. Subsequent to the birth of her last child, she suffered much from some uterine complaint, probably arising from injuries done those parts by an officious, ignorant midwife, of whose ignorance, and pecuniary views, many of our best women are, from the custom of employing them in this country, the unfortunate victims.

The custom of the country, together with the influence of a false delicacy, of which this custom is the parent, influence women to employ midwives who are ignorant, officious, and even malicious, not aware of the fatality which attends their operations, till learned by a wretched experiment. This uterine disease, of which I have just spoken, was followed by scirrhosity or callosity, which induration affected the lower hemisphere of the uterus, together with the cervix uteri. This part being thus rendered inexpansible, determined the whole of the action of the expanding powers to the fundus uteri, which, making a by far greater requisition of this part than it was able to yield, it was necessarily lacerated. From the torn and ragged edges, immense effusions of blood were made, into the cavity of the abdomen, destroying life by the distension of the abdomen and pressure of the viscera in part, but principally by the disorganization which this tender viscus suffered, and the immense loss of blood. See the plate.

Having gone through the duty which I proposed, I close my communication. I am, Gentlemen, with sentiments of high respect,

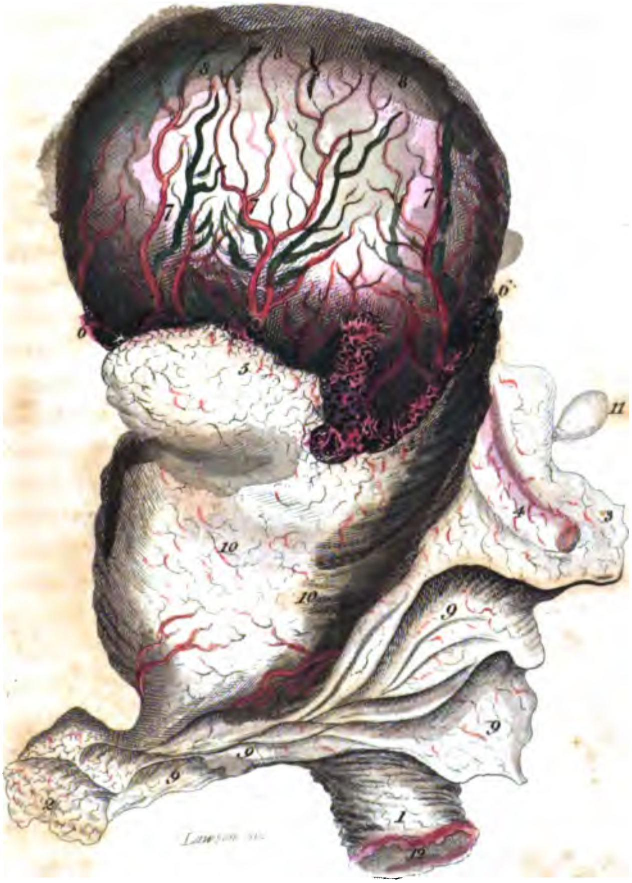
Your obedient servant,

MILTON ANTONY.

May, 1814.

Explanation of the Plate.

1. The vaginal tube.
2. The right ovarium.
3. Membranes covering the left ovarium.
4. Left ligamentum rotundum.
5,5. Ruptured edges of the fundus uteri.
6,6,6. Coagula of blood and lymph which adhered to the ruptured edges of the uterus.
7,7,7. Arterial and venous structure of the chorion.
8,8,8. The chorion containing a five months fœtus and liquor amnii.
9,9,9. Different folds of membrane, which are anterior to the os tincæ.
10,10. Indurated portion of the uterus and cervix.
11. An Hydatid.
12. Cavity of the vagina as shown by a transverse section of that viscus one and an half inches below the os tincæ.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ORIGINAL REVIEW.

The Surgical Works, or Statement of the Doctrine and Practice of P. J. Desault, Surgeon in chief of the Great Hospital of Humanity, at Paris. By XAVIER BICHAT, his pupil, Adjunct Physician in the same Hospital. Translated from the original, by EDWARD DARREL SMITH, M. D. Professor of Chemistry, &c. in the South Carolina College. Published by Thomas Dobson. Philadelphia, 1814. 2 vols. 8vo.

DESAULT was for many years eminent as a teacher of Surgery. The clearness of his descriptions, the precision with which he detailed the different steps of the operations, the adroitness he displayed in the manipulations, attracted many to hear his lectures. Towards the close of his life, he published the Journal of Surgery, and, in conjunction with his friend Chopart, he gave a treatise on the Diseases of the Urinary Passages. During the period in which he filled the station of surgeon in chief in the Hotel Dieu, he engaged in giving a course of clinical instruction. It was in this school, resorted to by numbers from the different provinces of France, and visited by many from other parts of the civilized world, that the doctrines and practice of Desault were first made known. Xavier Bichat, a favourite pupil, and an assiduous attendant on these instructions, collected the opinions of his master, delivered in these lectures, or dispersed through the journals; which he illustrated by cases drawn from the records preserved by the pupils who attended the practice of the Hotel Dieu. These were first published in 1799, about four years after the death of Desault. The work had a very rapid and extensive sale. In 1801, Bichat presented a new edition with corrections and additions, in two volumes octavo, which he dedicated to Corvisart, the friend of Desault, and well known by his treatise on the organic diseases of the heart. The first volume, containing memoirs on fractures of the bones, and on dislocations of the joints, with the mode of treatment practised by Desault, was translated and published by Dr. Caldwell of this city, in the year 1805. This translation underwent a new edition in 1811. To use the language of Dr. Smith, of whose translation we have undertaken to offer some notice, "it has probably excited in all who have perused it a desire to be acquainted with the illustrious author's other labours, which are comprised in two more volumes." Dr. Smith informs us, that "his aim has been accuracy and fidelity in the rendering of the meaning rather than elegance of expression in the style;" and expresses the hope, "that the work will meet with the requisite indulgence from the candid reader."

There is a difficulty in translation, which those alone who have engaged in the task of rendering the meaning of an author into a different language, can justly appreciate. Every nation is in the use of terms, often extremely descriptive; for which the translator is at a loss to find corresponding ones in the language in which he writes. Besides which, he is apt insensibly to adopt the idiom of the language from which he translates. In works of science, provided information is conveyed, inaccuracies of style are rarely the objects of rigid criticism; and a generous public will readily extend the same indulgence to the labours of the translator.

The original has been in our possession more than twelve years. We have perused it with attention, consulted it often, and treasured up the maxims it contains. The opinions and practice of Desault, however, are of too high authority to require our commendation. Those who do not read the language he spoke, will gladly receive the lessons of that eminent surgeon in a language with which they are familiar, and to such the translation before us will prove an acceptable present.

Biographical Memoir of M. Sabatier.

[From the New Medical and Physical Journal, for January, 1813.]

M. Sabatier was the eldest son of Pierre Sabatier, a respectable member of the College and Academy of Surgery in Paris. The subject of this memoir was born in that city, on the 11th of October, 1732, and received the rudiments of classical education in the College des Quatre Nations, in the neighbourhood of which his father dwelt. As his years increased, he applied himself closely to the study of physics, and received lessons in geometry from the celebrated Abbe Caille; his leisure hours he employed in making himself master of the English and Italian languages, of music and drawing; accomplishments which procured him a favourable reception in society, and became the solace of his future life. At the age of seventeen he was made Master of Arts, and was qualified for any profession he should choose to embrace: disappointed by the sudden death of a maternal uncle, of the brilliant prospects in first setting out in life, which he had been led to anticipate, he devoted himself to the profession of surgery, and studied this science under Petit and Verdier; having also entered himself a pupil in the Hospital de la Charité, where his father had held the office of surgeon in chief previous to the appointment of Faget. His assiduity and application were remarkable, nor did he disdain, like the pupils of the present day, to attend to the most minute details and trifling offices of practical surgery. His diligence was well rewarded. The illness of his father, which happened some time after, called young Sabatier to supply his place among his patients, who kindly accepted the substitute; nor had they ever any reason to repent their confidence. The death of his father, before young Sabatier was legally authorised to succeed to his practice, threatened to plunge the family, consisting of four children, who depended upon the exercise of his profession for their support, into difficulties; but through the kindness of two aunts, who contributed to the expense, he presented himself for admission into the College of Surgeons, the leading members of which, who had witnessed his excellent conduct and diligent attendance, indulgently favoured him, and suffered his name to be enrolled amongst them before he had well attained his twentieth year. The subject of his dissertation, was the operation of bronchotomy, and the usual examinations were performed by him with credit and honour; he then gave a presage of the future distinction and celebrity he was destined to attain. His situation now, however, was an arduous one; scarcely had he completed the usual course of professional instruction, when he was placed, by the death of his father, at the head of the family, who had to depend upon him for protection and support. His ardent mind overcame all difficulties; in a few months he commenced a course of anatomical lectures, for the double purpose of procuring resources to maintain his family, and of perfecting himself in that science; for the best method of learning one's-self is, to instruct others; by this means also, a regular habit of connected study is acquired, and the art of forming clear and correct ideas.

His anatomical course afforded him many opportunities of making experiments, both direct and comparative, which served to throw light on the anatomy and pathology of the human frame. His table was well filled with subjects, and when, during his dissections, he met with any extraordinary appearance, he carefully recorded it, and made use of the fact, either to establish some general truth, or illustrate some point of doctrine. With a liberality of sentiment, which characterised him through life, he communicated his discoveries to those who were in search of similar facts. Happening one day to find among his father's papers, an account of his having met with an extra-uterine gestation in a woman, and proposed the operation of gastrotomy as the only resource, which being objected to by her family, the woman died, when the necessity of the operation was fully apparent on dissection, he hastened to Simon, then occupied in writing upon the Cæsarean operation, and communicated this case to him, who placed it in his work by the side of that of Cyprianus. Another time he discovered in a woman, about 30 years old, subject to violent fits of convulsions and hiccupings, which no medicine could either prevent or allay, a tumour scarcely perceptible in the epigastrium. He reduced it, and the symptoms ceased; a suitable bandage prevented its recurrence, and the symptoms did not return. It was a hernia of the stomach, and Sabatier immediately sent the case to Pipelet, who was then writing his interesting memoir upon this subject.

Morand, surgeon in chief to the Hotel des Invalides, wished to have Sabatier near him, and prevailed upon him to remove his school of anatomy to the hotel; it was to be feared that the attachment of his pupils, and the confidence of the public, would scarcely follow him to the other extremity of the city; but as this had happened to Morand as well as to his predecessors, Sabatier was not dismayed; and it was here he displayed all the fecundity of his resources and the riches of his talents; his lectures had never before been attended by so many auditors, nor by auditors of such distinction. Foreigners sent to Paris by their sovereigns to acquire instruction, who were to return home and enlighten their respective countries, were the most constant in their attendance. When he could not speak their language, and they did not understand his, he gave his demonstrations in Latin. But the pupils whom Sharp, Douglas, Monro, and the two Hunters, sent to him, and those recommended to him by Moscati, Bertrand, and Cotunni, when they heard him speak English and Italian so fluently and so pure, could scarcely believe themselves out of their own country, but almost thought they were still beside their former masters. He had not, however, a good delivery; his voice was weak, and his utterance too rapid: but the order and precision of his ideas were such, and the animation of his manner so impressive, that he could not fail warmly to interest all his hearers.

He speedily rose into notice, and was frequently called into consultation with surgeons of the first eminence; at first he appeared as the representative of Morand, and was afterwards sought for on account of his own reputation: he well understood how to reconcile the deference due to his seniors, with the duties required of him by conscience and the welfare of his patient; and frequently when he appeared to yield to the opinions of others, it was no other than his own which they had adopted. Morand had a niece, to whom, after three years, Sabatier became united, when he took up his residence in the Invalides, and left his paternal house to his mother, who resided in it till her death, in 1770, constantly experiencing the most tender cares from her affectionate son.

The time of Sabatier was divided between the study of anatomy and the practice of surgery, both within and without the hospital. Faithful to the precept of Cicero*, he never suffered a single day to pass without making extracts, or working at some memoir; and every month, every year, he reckoned not how many patients he had seen, or what they had brought him, but what progress he had made, and how much nearer to perfection he had arrived. Nothing could excuse in his eyes the conduct of those routine practitioners, so proud of their pretended experience, which, in fact, is all they possess, and with whom the acquisitions of science go for nothing; but when they disgraced themselves by the shameful traffic of secrets, the natural mildness of his character seemed to forsake him, and in his indignation he would have driven from the Temple these vile traders, who profaned the sanctity of it. What! secrets in the divine art of relieving our afflicted brethren! O! he would exclaim, with the eloquence of Burke or Fox, if torture were ever permitted, it should be inflicted on the man who conceals a discovery which would be useful to the state when in danger, or to suffering humanity in the agonies of pain. And on these occasions he would mention Raw, the famous Dutch lithotomist, who suffered the secret of his operation to descend with him into the grave, and died without the esteem or respect of any one; leaving his name to be execrated and despised by posterity.

Always having entertained a hope of entering into the Academy of Sciences, he dedicated to this body the fruit of his anatomical researches; at one time demonstrating, contrary to the opinion of the celebrated Mickel, that the lymphatic vessels of the stomach opened into the thoracic duct, and not into the veins of that viscus; at another time ascertaining the power of absorption in this order of vessels, first discovered by Glisson; he also explained, from the distribution of the ophthalmic nerves, that dimness of sight, which Hippocrates had observed to follow a blow on the superciliary arch, and pointed out the practical application of this discovery in certain affections of the eye, as Valsalva had before done, who removed a spasmodic blindness, produced by a slight wound in the forehead, by changing the mode of action in the nerves of the part by friction.

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* *Nulla dies sine litera.*

The papers presented by M. Sabatier to the Academy of Sciences, previous to his becoming a member, were but the outlines of those memoirs he afterwards read to them, and which are printed in their collection. In 1766, he showed them two scirrhous ovaries, found in the body of a woman three months pregnant, from which circumstance he deduced consequences opposite to the generally received system of generation. In 1773, he read two memoirs, which were published in the 7th vol. of Memoires des Savans Etrangers, these are the 5th and 6th of those placed at the 3d vol. of his Treatise on Anatomy. Although there was not for some time any vacancy in the academy, M. Sabatier did not relax in his labours; that occasioned by Ferrein was, as an act of justice, given to M. Portal, who had been longer waiting for it, and had then done more to deserve it: but upon the death of Herissant and Morand, two years afterwards, his wishes were crowned with success, even beyond his hopes, for he both attained the place he so long desired and the honour of being appointed to it before Vicq-d'Azir, who, on this occasion, and perhaps on this occasion only, obtained but the second rank. So flattering a distinction animated the zeal of Sabatier in a still greater degree, and consoled him for some domestic uneasiness he then experienced.

Among the papers presented to the Academy of Sciences after his admission into that body, (for to enumerate them all would occupy too long a space,) were, in 1775, a case of one of the vertebræ completely destroyed in a strong and robust man, who never experienced the least inconvenience from it, nor any illness, external or internal. In 1780, remarks upon the thoracic duct; he having in one subject found it filled with fluid blood, and with coagulated blood in two others, from which he inferred the existence of some bloodvessels opening into that canal. In 1783, a memoir upon some peculiarities in the spinal marrow and its investing membranes. In 1790, observations on the recti muscles of the abdomen. These different cases and memoirs were published in the collection of the Academy.

During the war which followed the revolution in France, he was ordered to join the army of the north, then before Mons, in quality of consulting surgeon; but he staid with them only a short time, the fatigue of this situation at his advanced age, then sixty, and with his weak frame, were too great for him, and he very soon obtained leave to retire from it; and was a short time after appointed with two colleagues, who if chosen by himself could not have acted more cordially with him, to inspect the military hospitals; this duty was performed in a manner which gave great satisfaction to all concerned.

On the first establishment of the National Institute he became one of its members, and no one more faithfully discharged the obligations this honour imposed; during the first year, he read to his class a memoir on the exhibition of large doses of opium, as practised by the English surgeons, in cases of locked jaw occasioned by wounds, the propriety of which practice he established, whilst he highly disapproved of the proposed operation of amputation in cases where the wound had been inflicted on one of the extremities. In a second memoir, he called the attention of surgeons to the fracture of the sternum, the occurrence of which, although a rare accident, had been sufficiently proved; and cautioned them to guard against the accidents which might arise from the pressure of the bone on an important vital organ.

M. Sabatier could not exist without occupying himself in study; passionately fond of his profession, he was anxious to contribute all in his power to advance and ennoble it. To the end of his life, he was constant in his attendance at the sittings of the Institute and of the Society of Medicine, where he was an attentive observer of all that passed; whenever he spoke, he was listened to with the greatest respect, and the ideas and opinions which he uttered, were always forcible and full of truth. His emulation was generous and praise-worthy, never tinctured with the least envious detraction of the merits of others. Foreigners, who visited him for the purpose of paying their respects to one whose fame had reached their own country previous to their quitting it, always parted from him with regret, so adroitly did he flatter their national vanity, by praising their own works, or those of their countrymen, without even suffering them to speak of his.

Early in June, 1811, M. Sabatier was attacked with a fever, the first approach of which seriously alarmed his physicians, his friends, and family. At one time it was hoped, that science directed by able hands might triumph over the disease, even at his advanced age; vain hope! all the resources of art were ineffectual. The healing art, it may be said, is only a long apprenticeship to death; it continually recalls to the recollection, that all are mortal, that every thing under heaven perishes, every thing changes. By the exercise of this art we are taught humility, and to prepare ourselves for a change, which we know to be inevitable. Sabatier was not afraid of death; he waited for it with calm expectation, occasionally retaining some gleam of that hope which is the last feeling that dies in man. One day having recovered from a syncope of long continuance, he said to his afflicted son who was present, Profit, my son, by this lesson, and remember it is your father who teaches you to die. He exemplified the truth of the reply which he once made to a nobleman of high rank, who ironically demanded of him, if in his extensive anatomical researches he had by chance discovered the art of prolonging life? No, duke, said he to him, but I have in consequence of them, discovered a secret which, perhaps, your grace does not possess, it is that of not being afraid to die.

During the last stage of departing life, he was self collected, his mind retained its wonted energy, and his heart all its sensibility. He thanked his wife and children for all their affectionate cares, and exhorted them to be henceforth but one family.* He departed this life on the 19th of July, 1811, having nearly completed his 79th year.

The Institute and Faculty of Medicine were each sitting at the time of his death, and heard of it with the most lively regret. Most of the members assisted at his funeral obsequies; a numerous crowd of students, of citizens of all ranks, surgeons of the guard, of the garrison, and of the different hospitals, several eminent physicians and apothecaries, all followed his remains to the grave, where military honours were paid to them by a detachment of soldiers who attended, and the grave closed amidst the lamentations of all descriptions of people.

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* He had married a second wife, by whom he had two daughters.

MEDICAL AND PHILOSOPHICAL INTELLIGENCE.

[From the New Medical and Physical Journal, for January, 1813.]

Mr. Dufaud, Director of the Iron Works at Montalaire, near Creil, in a letter addressed to M. d'Arcet, writes as follows:—"I have undertaken, with the greatest pleasure, the experiments on sawing hot cast iron, that you recommended to me: I have followed your instructions; and my trials have been attended with the most complete success. My first trial was made with the support of a grate, 108 mil. [4·25 in.] thick. This piece of cast iron was heated in a forge fire with coal; and as soon as it had acquired a sufficient degree of *incandescence*, it was placed on an anvil, and I sawed it with a common carpenter's saw, without any difficulty, and without any injury to the saw, which I dipped immediately into cold water. The carpenter continued to work with the same saw, without having any occasion to repair it. My next experiment was with a pivot of 135 m. [5·3 in.] in diameter; but, afraid of its breaking if I cut it cold, an operation besides very tedious and uncertain, unless executed in a lathe, I had resolved to cast another, when the experiment I have just mentioned determined me to saw it. Having marked the place of section with red lead, I placed the pivot in a reverberatory furnace, and placed on an iron support, so that the two ends had equal bearings. In four minutes, with two saws, which I used and cooled alternately, the piece was cut off, to the great astonishment of my workmen, who found the saws unhurt. The same day I performed a still more difficult operation. I had an anvil, which I was about to cast afresh, because it was 41 m. [1·6 in.] too thick, so that it could not be placed in its bed. I marked the place of the saw kerf with red lead. The two cuts to be made were 217 m. [8·5 in.] long, by 189 m. [7·4 in.] high; and the thinness of the piece to be cut off required precision. This anvil was heated in a reverberatory furnace, in the same manner as the pivot; and, when sufficiently hot, two workmen took hold of it with a strong pair of tongs, and laid it on a block of cast iron. It was cut with much ease and precision, by the same saws that had been used in the preceding instance. In the course of these experiments I remarked, 1. That hot cast iron may be sawed as easily, and in the same space of time, as dry wood. 2. That, to diminish the resistance, the saw should be set fine. 3. That iron heated in a furnace, saws more easily than if heated in a forge; and the reason is simple: in a furnace it is heated equally throughout, while in a forge the part near the tewel is almost in a state of fusion, while that opposite to it is scarcely red-hot. 4. That the iron must not be made too hot; for, if its surface be too near a state of fusion, the saw will be clogged, and the process will not go on well. 5. That the saw should be moved very quickly, because then it will be less heated, make its way better, and the cut will be more clean and exact. 6. Lastly, that the iron should be so placed as to have a firm bearing every where except where the saw is to pass, otherwise it is liable to break before the cutting is finished.

FROM THE BOSTON PATRIOT.

Aurora Borealis.—On the evening of the 17th instant, a very brilliant Aurora Borealis rendered the northern part of the heavens luminous from the expiration of the crepusculum until past midnight.—The 15th and 16th were cold days, the wind generally from the north-east, east, and south-east, accompanied with thick fogs and considerable rain.

On the morning of the 17th, the wind was strong from the the south, and chilly, and continued to blow with violence during the day; but the thermometer rose gradually from about nine until four o'clock. The atmosphere had been quite clear—only a few pale clouds obscured the sky at intervals. After sunset, very dark clouds hung within five degrees of the north-eastern horizon, and less sable ones skirted the west—but nearly north, of about forty-five degrees elevation, a peculiar black appearance resembling a dense vapour; but that it was not a congregation of mere aqueous exhalations, is to be inferred from the circumstances, that the stars were visible through its margins, and its colour continued uniformly the same.

From the edges of this dark curtain, a bright light emanated, similar to that which illuminates the confines of a cloud when the moon is about to emerge therefrom. Streaks of light rose from those clouds, which skirted the horizon, and extended to the zenith. These coruscations were momentary, and left the whole northern part of the heavens illuminated with a mellow light. The bases of these broad rays of light were from one to ten degrees in width, and terminated in lambent points, like the pyramidical flames which arise from an immense conflagration.

Sometimes the general aspect of the light was like that which precedes the appearance of the sun a few minutes before he rises.

The most luminous period of this phenomenon, was between eight and nine o'clock, when the trees, buildings, and every elevated object, cast a very perceptible shadow towards the south. So great was the diffusion of light, that the stars in the northern quarter of the hemisphere were not visible, except those of the first and second magnitude. The air was gradually chilled as the night advanced, and a gentle breeze from the north-west arose soon after sun-set.

The colour of the light was various, and continually changed—sometimes tinged with yellow, then red, but its general spectrum was a rose white.

The radii, which ascended from every part of the heavens, rose perpendicularly, and although the most splendid were lanched from the clouds, still scintillations continually flashed from those parts of the atmosphere which were perfectly clear. Some of the largest cones of light continued for two or three minutes, and gradually disappeared. Towards the latter part of the phenomenon, the clouds and light settled near the horizon, and looked like a bright undulating twilight after a thunder storm, which subsides just before sun-set, when the clouds have settled quite to the horizon. This most sublime spectacle has not been frequent since the revolution.

The first Aurora Borealis noticed by the philosophers in

Great Britain, happened on the 30th of January, 1560. Others occurred on the 7th of October, 1564, 14th and 15th of November, 1574, and 9th of August, 1703; but the most remarkable, until more modern times, was that of March the 6th, 1715, which not only caused vast consternation in the wondering spectators of the multitude, but excited great interest among the literati of England, and induced many of them to minutely describe its appearance—on the promulgation of which, the philosophers of Europe advanced various theories on the cause of this phenomenon.

Professor Cotes supposed it to arise from a thin nitro-sulphureous vapour, raised in the atmosphere considerably higher than the clouds, and that this vapour took fire. Chr. Maiens' solution was similar. Others imagined that vapours rarefied exceedingly by subterraneous fires, and tinged with sulphureous steams, might from thence be disposed to shine in the night. Doctor Halley has recourse to the *magnetic effluvia* of the earth, which he supposes to perform the same kind of circulation with regard to the earth, as any effluvia of any particular terrella does with respect to that.—M. de Mairan, in his philosophical treatise on the Aurora Borealis, endeavours to prove that it is owing to the *zodiacal light* on the atmosphere of the sun, spread on each side of it, along the zodiac, in the form of a pyramid.

Many have conjectured that it can be clearly accounted for on the principles of *electricity*, while others say it is the reflection of the sun's rays from the regions of ice which surround the north pole.

A COUNTRY SPECTATOR.

April 19th, 1814.

An Aurora Borealis was seen at Philadelphia at the same time, but not so brilliant nor varied in its appearances as that seen near Boston.

ROYAL SOCIETY.—The doctrine of animal heat, or rather the comparative heat of arterial and venous blood, has occupied the attention of Mr. JOHN DAVY, who communicated the result of his labours in this department of science to the society. The experiments of Crawford being performed at a time when the process and means of analysis were much less perfect than at present, it is necessary they should be repeated before they can be received as correct results in the actual state of our knowledge. Mr. Davy operated on the blood of sheep and lambs; and the detail of his experiments will be read with more pleasure, from the consideration that no animal experienced any pain from his researches. He began by depriving arterial and venous blood of fibrine, ascertaining their specific gravity, the former being 1047, and the latter 1050, placing them in glasses of equal dimensions, filling a similar glass with water raised to the same temperature, and observing their relative rate of cooling. In different experiments he found arterial blood 93 7-10, and venous 92, a result altogether incompatible with the theory of Crawford, but reconcileable with that of Dr. BLACK, or the opinion of Mr. BRODIE. The posterior portion of the brain he found from one to two degrees higher than the anterior, and both were as much lower than the rectum. The heat of the body generally diminishes in proportion to the distance from the heart. (This fact is not very consistent with the notion of the nerves occasioning animal heat, as its focus is not very replete with nerves.) In general the temperature of arterial blood was from 1 to 1 1-2 degrees higher than that of venous; only one degree was observed between the heat of the blood in the left and right ventricle of the heart. A newly-born child raised the thermometer to 96; after three days it rose to 99. Mr. Davy also made a variety of experiments on all parts of the body, with a view of ascertaining their relative heat; he avoided all theoretical speculations, but seemed somewhat inclined to the supposition of Dr. Black, respecting the origin of animal heat.—*Analectic Magazine.*

Dr. SPURZHEIM, the colleague of Dr. GALL in his lectures on *Craniology*, is now in London, and about to commence a course of lectures on that novel subject. He purposes to publish a View of the Doctrines of Gall, and to illustrate the work with numerous engravings, made from drawings of the skulls of criminals, and others, in Germany and France. The subject merits notice, but its deductions appear to us to have been made with those over-sanguine feelings that usually characterize new discoveries. Dr. S. is an Austrian, and enjoys considerable reputation at Vienna, as a man of learning and science.—*Ibid.*

Dr. MITCHILL, professor of natural history in the college of physicians in New York, is engaged in preparing for publication a work on the natural history of the fishes of New York. This will include almost every variety of fish which frequent the American coast, or inhabit the rivers and streams of this continent. It is an untrodden field of investigation, and the learned professor can derive little assistance from the European ichthyologists. He must depend upon his own observations and industry. We have seen the first sheets of his book, and so far as he has proceeded, he has executed the work in the most satisfactory manner. Dr. Mitchill seems about to perform for the ichthyology of his country, what Wilson has done in its ornithology. It is to be regretted that the doctor is not enabled by public patronage to call in the aids of the arts; and, by accompanying his descriptions with accurate and highly finished engravings, to present the lover of the fine arts and of natural history with a proper companion to the splendid volumes of Wilson.—*Ibid.*

M. ORFILA, a young Spanish physician, has produced an extensive work upon *Poisons* considered as connected with Medicine and Jurisprudence. The first volume only has been presented to the National Institute of France, and treats of the poisons of mercury, of arsenic, of antimony, and of copper. The author has made many experiments, on the differences which are occasioned by the presence of aliments in the mode in which poisons are affected by re-agents, differences which may, in certain cases, conceal their properties, and prevent their detection: he has pointed out all the precautions necessary to be taken by the jury, [*experts*], to give faithful information to justice, when consulted by her. He has especially endeavoured with the greatest care to investigate all the known means of arresting the deleterious effects of these poisons, and to discover new remedies when the old ones did not answer his expectations. Thus, according to M. Orfila, the albumen, or white of the egg, diluted in water, is the only antidote of corrosive sublimate; and common sugar in lumps is the antidote of verdegris; a pleasing result, to which theory alone would not have led.

M. Portal has published an important work, *on the Nature and Treatment of the Diseases of the Liver*, in which he has delivered the result of his extensive experience on the affections of an organ, whose great influence, both in health and disease, is well expressed in the motto chosen by the author: *Quanto magis ad sanitatem prodest, tanto et deterius in morbis afficitur.*

Analyse des Travaux, &c.

COLLEGE OF PHYSICIANS OF PHILADELPHIA.

July 5th, 1814.

At the annual meeting of the College held this day, pursuant to charter, the following officers were duly elected;

President.
Doctor Adam Kuhn.
Vice-President.
Doctor Thomas Parke.
Censors.
Doctor Caspar Wistar.
William Currie.
Samuel P. Griffitts.
Thomas T. Hewson.
Treasurer.
Doctor Thomas C. James.
Secretary.
Doctor Joseph Parrish.

PENNSYLVANIA HOSPITAL.

Patients admitted from April 24th, 1813, to April 23d, 1814,	594
Attended as out-patients,	1232
	1826

Of this number there have been

Cured	1279
Relieved	116
Removed	45
Irregular	32
Infants born	9
Eloped, &c.	14
Died	161
Remaining under care	170
	1826

May 2d, 1814.

The following Contributors were elected Physicians, viz.

Dr. THOMAS PARKE, PHILIP SYNG PHYSICK, BENJAMIN SMITH BARTON, JOHN SYNG DORSEY, JOSEPH HARTSHORNE, JOHN C. OTTO,	Physicians for the House.

THOMAS C. JAMES, for the Lying-in department.
SAMUEL CALHOUN, for Out-Patients.

METEOROLOGICAL OBSERVATIONS.

State of the weather at Philadelphia, during the first six months of 1814.

January.

Thermometer—Lowest, at 8 A. M. 18, 31st day of the month.
Highest, at 3 P. M. 40, 17th.
Mean . . . . 31.

Winds—mostly westerly,—snow on the 10th and 18th.

A considerable proportion of clear weather, not very cold.

February.

Thermometer—Lowest, at 8 A. M. 19, 4th day of the month.
Highest, at 3 P. M. 49, 24th.
Mean, ... 34.

Winds westerly,—several falls of snow and rain,—skating on the river on the 5th,—very slippery on the 9th and 10th,—river clear of ice on the 12th,—23d, river rock and perch in market.

March.

Thermometer—Lowest, at 8 A. M. 21, 1st day of the month.
Highest, at 3 P. M. 57, 31st.
Mean, ... 36.

Winds westerly,—an uncommonly cold March,—snow as late as the 22d,—navigation obstructed by ice on the 3d, and continued so until the 7th,—shad in market on the 28th.

April.

Thermometer—Lowest, at 8 A. M. 40, 16th day of the month.
Highest, at 3 P. M. 66, 27th.
Mean, ... 50.

Winds variable, chiefly from NE. SW.,—frequent rains,—a great fresh in the river on the 2d,—swallows and martins appeared on the 3d,—frost in the nights of the 11th and 15th,—an Aurora Borealis on the night of the 17th, which was very brilliant near Boston.

May.

Thermometer—Lowest, at 8 A. M. 53, 3d day of the month.
Highest, at 3 P. M. 78, 26th.
Mean, ... 61.

Winds, southerly most prevalent,—several rains, with thunder and lightning, on the 19th, 21st, and 27th.,—great drought at Charleston, South Carolina.

June.

Thermometer—Lowest, at 8 A. M. 58, 7th and 8th days of the month.

Highest, at 3 P. M. 78, 29th.

Mean, ... 68.

Winds—easterly winds prevalent for the first three weeks; then northerly and westerly for the most part, to the end of the month. A severe thunder storm in the city on the 18th, which struck several ships in the harbour, and some houses—one boy was killed;—for 8 or 10 days previous much rain, often very heavy; then dry and pleasant to the end of the month. A prospect of a good harvest for hay, grain, and fruit. On the 3d inst. a violent tornado at Kaskaskias in the Illinois Territory. On the 4th, a severe storm, accompanied with thunder, lightning, and hail stones, about twenty miles from Louisville, Kentucky, commencing at the mouth of Salt river, and laying every thing prostrate for about eight miles in a south-westerly direction. The Boston papers mention much damage done to vegetation, by frost, on the 23d inst., in Massachusetts and New Hampshire, particularly on the seaboard.

The measles appeared about the middle of January, in the northern part of the city, and continue till this time, though evidently declining. They have been of a mild character. Pneumonic complaints frequent in March. Several cases of typhus during the cold weather: some of them of a malignant character. No small pox. Vaccination has been generally practised, especially among the poorer classes of the community.

LIST OF RECENT FOREIGN PUBLICATIONS.

MEDICINE.

An Appendix to an Inquiry into the Present State of Mecal Surgery. By the late Thomas Kirkland, M. D. Taken from his MSS.; with a Preface, Introduction, &c. By James Kirkland, surgeon apothecary to the Tower. 8vo.

Outlines of the Anatomy of the Human Body in its Sound and Diseased State. By Alexander Monro, Jun. M. D. F. R. S. Ed. 4 vols. 8vo.

A Treatise on the Diseases and Organic Lesions of the Heart. By J. N. Corvissart, M. D. Translated from the French by C. H. Hebb, Esq. 8vo.

Tracts on the Gout. By T. Sutton, M. D. 8vo.

Cases of two extraordinary Polypi removed from the Nose. By Thomas Whately.

A Practical Synopsis of Cutaneous Diseases, according to the arrangement of Dr. Willan. By Thomas Bateman, M. D. F. L. S. 8vo.

Essay on the Utility of Bloodletting in Fever. By Thomas Mills. 8vo.

A Treatise on the Remittent Fever of Infants. By J. M. Coley. 8vo.

Medical Histories and Reflections. By John Ferriar, M. D. Vol. IV. 8vo.

Observations on the Use and Abuse of Cold and Warm Sea-Bathing. By John Gibney, M. D.

An Essay on the Influence of Tropical Diseases. By James Johnson, Esq.

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